THE STORY OF A GREAT DELUSION.

WILLIAM WHITE.

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THE STORY

OF

A GREAT DELUSION.

EDWARD JENNER.

From the statue by Monteverde.

THE STORY

OF

A GREAT DELUSION

IN A SERIES OF MATTER-OF-FACT CHAPTERS.

By WILLIAM WHITE.

All the world assenting, and continually repeating and reverberating, there soon comes that singular phenomenon, which the Germans call Swarmery, or the "Gathering of Men in Swarms," and what prodigies they are in the habit of doing and believing, when thrown into that miraculous condition. . . .

Singular, in the case of human swarms, with what perfection of unanimity and quasi-religious conviction the stupidest absurdities can be received as axioms of Euclid, nay as articles of faith, which you are not only to believe, unless malignantly insane, but are (if you have any honour or morality) to push into practice, and without delay see *done*, if your soul would live!—THOMAS CARLYLE.

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INTRODUCTION.

PREFATORY.

THERE are few matters among educated people upon which opinion is so absolute and so ill-informed as vaccination. They will tell you it has stopped smallpox and does no harm, and if you venture to question either assertion you are set down as an abettor of "those ignorant and fanatical anti-vaccinators." If undeterred you inquire when smallpox was stopped, and which is the harmless variety of vaccination, you will probably be told that these are medical questions, whilst the facts are indisputable; the answer running in the line of Old Kaspar's to Little Peterkin, inquisitive as to the good of Blenheim—

> Why that I cannot tell, said he,
> But 'twas a famous victory.

I am not complaining of this attitude of mind. We all accept more or less on bare authority. In the multiplicity and unsearchableness of knowledge, it is unavoidable. Some years ago a venerable friend urged me to write against vaccination, which, he said, was working endless mischief to the public health. He would have the book published, and provide whatever was requisite for my satisfaction. I pleaded prior engagements, and turned the conversation, thinking how sad it was that one so good, and, in other respects, so enlightened should be subject to so strange an illusion—I, then, taking vaccination on trust as one of the numerous blessings conferred upon mankind in the course of the present century.

I am therefore disposed to make large allowance for the credulous attitude of the public toward vaccination

whilst at the same time insisting on its correction; and for this reason especially, that vaccination is no longer a matter of private concern. We are free to entertain what notions we please, but if we proceed to enforce them on unbelievers, we cannot complain if we are required to answer for our aggression or encounter rough usage. Enforced by the law of England, vaccination is related to the life and intelligence of every citizen, and it is consequently vain to claim for it exemption from vulgar discussion. Apart from its compulsory infliction, vaccination might be and remain an esoteric rite, the very mystery of mysteries; but with compulsion the privilege of sanctity is impossible.

VARIOLATION.

It has been said that beliefs and observances in themselves most irrational wear a different aspect when viewed in the light of their origin and history. It is so with vaccination. Had it come upon the world as we know it, with failure and disaster, equivocation and apology, rejection would have been inevitable; but when we turn to the past we discover that our *damnosa hæreditas* has a tradition that goes far to account for, if not to excuse, the folly which remains.

Vaccination was the successor of Inoculation (or, more precisely, Variolation), entering into a possession already acquired in the human mind.

It had been observed from of old that some forms of disease rarely recur in the same person in a lifetime; and thus when scarlet fever, or measles, or smallpox broke out in a family, it was considered prudent to let the disease have its course, and thereby obtain immunity from fear of future infection.

It was this confidence, that smallpox once undergone was finally disposed of, that was the justification of the practice of inoculating the disease when introduced from the East in the first quarter of last century. Inasmuch, it was argued, as none can have smallpox more than once, why not induce it artificially, and pass through the ill-

ness at a convenient season? But Nature, though compliant, does not always accept the course we ingeniously prescribe for her. Smallpox as naturally developed (so to speak) is a crisis of impurity in the blood, and if the requisite conditions are absent, it cannot be adequately excited. Hence variolation was an uncertain and hazardous operation. It took with some and was indistinguishable from an attack of ordinary smallpox; it took partially, or not at all with others; and the operation was frequently followed by malaise, disorders of the skin, and grave constitutional derangements. Nor were the variolated secure from smallpox. They occasionally had smallpox with their neighbours, and then it was said, "There must have been some mistake about the "inoculation; for it is impossible that anyone can be suc- "cessfully inoculated and have smallpox." Further, the variolated, while labouring under the induced malady, conveyed the disease to their attendants and visitors; and thus smallpox was propagated by the means intended to avert it.

THE PRECURSOR OF VACCINATION.

At the close of last century, variolation had become the custom of the upper and middle classes of England. The trouble and the peril were disliked, but were accepted in the name of duty. The variolation of their children was an anxiety that weighed like lead on the hearts of affectionate parents; and glad and grateful they were when the operation was accomplished without serious mishap. Patients designed for variolation were dieted, purged, and bled; and smallpox from sufferers of sound constitution was diligently inquired for. Mild smallpox was in great demand and was propagated from arm to arm. When Dr. Dimsdale operated on the Empress Catharine he did not venture to convey smallpox direct to the imperial person. He looked out a case of "benign smallpox" with which he inoculated a strong young man, and from the young man the Empress. Unless we realise the inconveniences, the uncertainties, the disasters and

the horrors of the practice of variolation, albeit minimised, excused and denied by its professors, we can never understand the enthusiasm with which vaccination was received as its substitute. The promise conveyed in vaccination was a relief inexpressible, bearing with it a show of reason that was well nigh irresistible. The argument ran thus: No one can have smallpox twice, and the mildest attack is as protective from subsequent attack as the severest. Therefore it is that in inoculation with smallpox we find security. But inoculation with smallpox is an uncertain operation with dangerous issues. Here, however, in cowpox is discovered a mild variety of smallpox, which may be inoculated with perfect ease, and with no possibility of harm. And inasmuch as the mildest smallpox is as preventive of future smallpox as the severest, it follows that this gentle cowpox must serve as a full equivalent for smallpox itself.

IMMEDIATE TRIUMPH OF VACCINATION.

It was in this plausible shape that vaccination had an immediate triumph. The way was made straight for it and every difficulty removed by the existing practice of variolation. Dr. W. B. Carpenter says that vaccination was more strenuously resisted at the beginning of the century than it is at this day. He is completely mistaken. Vaccination came upon a generation prepared for it—which saw in it a prescription in full accord with common-sense. The entire medical profession, with a few exceptions, the King, Queen and court, were converted straight off, and parliament and society followed suit. It was, I confess, a natural development of opinion; and we need have little doubt that had we lived in those days we should have found ourselves shouting with the genteel mob. The limited resistance offered to vaccination was not based on physiological or sanitary science: such science did not then exist. It was the resistance of variolators who were satisfied with the established practice and resented its disturbance; professing at the same time immeasurable horror at the pro-

fanation to humanity by infection with bovine disease. Whilst we have no reason to identify ourselves with that resistance, we have to recognise the service rendered by the variolators in observing the results of vaccination—the persistency with which they traced and exposed its failure to prevent smallpox and the injuries and deaths it caused. So far as the maintenance of variolous inoculation was concerned, they fought a losing battle; but they drove the vaccinators from post to post (cursed while they did so as malignant false witnesses possessed of the devil) and at last compelled the admission that their infallible preventive could not be guaranteed to prevent, but only to make smallpox milder—a safe assertion because unverifiable, as disputable as indisputable in particular instances.

JENNER'S PROCEDURE.

About the matter of this prophylactic there was from the first a curious confusion which continues to this day.

Jenner was a country doctor at Berkeley in Gloucestershire, a dairy country, where the maids believed that if they caught cowpox in milking they could never afterwards catch smallpox. Jenner when a young man was inclined to accept the dairymaids' faith; but when he discussed it with his medical acquaintance, they ridiculed him. They said, "We know that such is the dairymaids' "faith, but we also know that it is untrue; for we know "dairymaids who have had cowpox, and afterwards had "smallpox notwithstanding their cowpox." Jenner was convinced and said no more about cowpox.

To this point let me draw special attention. No man knew better than Jenner that cowpox as cowpox was no preventive of smallpox.

Toward middle-life he had what he conceived to be a happy thought. Cowpox as cowpox he had dismissed as impracticable; but there was a variety of cowpox which he resolved to recommend.

Cows in Gloucestershire were milked by men as well as by women; and men would sometimes milk cows with

hands foul from dressing the heels of horses afflicted with with what was called *grease*. With this *grease* they infected the cows, and the pox which followed was pronounced by Jenner to have all the virtue against smallpox which the dairymaids claimed for cowpox.

HORSEGREASE COWPOX.

According to Jenner, then, the dairymaids were right, and they were wrong. They were right when the pox they caught was derived from the horse through the cow; they were wrong when the pox they caught originated on the cow without the horse. He thus discriminated a double pox—cowpox of no efficacy against smallpox, and horsegrease cowpox of sure efficacy.

Further, in this connection, it is to be observed, that farriers believed that when they got poisoned in handling horses with greasy heels, they too, like the dairymaids, were safe from smallpox.

It is not therefore for cowpox, but for horsegrease cowpox that Jenner is answerable. In cowpox he had not, and could have no faith.

In 1798 Jenner published his famous *Inquiry*, a treatise much more spoken of than read, wherein he distinctly set forth the origin of his chosen prophylactic. It was *not*, I repeat, cowpox: *it was horsegrease cowpox.* He carefully discriminated it from spontaneous cowpox, which, he said, had no protective virtue, being attended with no inflammation and erysipelas, the essential sequences of inoculation with effective virus.

REJECTION OF JENNER'S PRESCRIPTION.

I have said that the world gave a cordial and unhesitating welcome to Jenner's revelation, but the observation requires a startling qualification. Jenner's revelation as conveyed in his *Inquiry* was summarily and ignominiously rejected—was absolutely rejected. I wish to emphasise this point. Jenner published his *Inquiry* in order to recommend horsegrease cowpox, and what I have to say is, that the public declined to have anything

to do with horsegrease cowpox. The origin of cowpox in horsegrease was scouted as an intolerable origin. It was disgusting. Why a diseased secretion from horses' heels should be more repulsive than a similar secretion from cows' teats was not explained; but, as we all know, there is no accounting for tastes. Various attempts were made to verify Jenner's prescription by inoculating cows with horsegrease, but they ended in failure—fortunately, it was said, in failure; for as Dr. Pearson (chief among primitive vaccinators) observed, "The very name of "horsegrease was like to have damned the whole thing." What did Jenner do under these circumstances? Did he confront the public and assert the efficacy of horsegrease cowpox? Not he. He wanted money. He saw how the wind was blowing. He said not another word about horsegrease cowpox; and as the public were eager at any price to escape from the nuisance of smallpox inoculation, and disposed to substitute cowpox as a harmless substitute, why then he resolved to go in for cowpox, and pose as its discoverer and promoter.

JENNER'S TRANSFORMATION.

I am not making what is called a constructive charge against Jenner, but simply setting forth plain, undeniable matter-of-fact. I ask any one in doubt as to what I say to read Jenner's *Inquiry*, published in 1798, the prescription of which is horsegrease cowpox, and the condemnation of cowpox. Turn then to his petition for largess, addressed to the House of Commons in 1802, and what do we find? Not one word about horsegrease cowpox, but this audacious assertion:—

"That your Petitioner has discovered that a disease "which occasionally exists in a particular form among "cattle, known by name of Cowpox, admits of being in- "oculated on the human frame with the most perfect ease "and safety, and is attended with the singularly beneficial "effect of rendering through life the person so inoculated "perfectly secure from the infection of Smallpox."

Why, that was not Jenner's discovery! It was the

notion of the dairymaids, and, so far as concerned spontaneous cowpox, was known by Jenner to be untrue. Yet, strange to say, the claim was in a measure allowed by the House of Commons, and £10.000 awarded to the imposter, and subsequently £20,000 in 1807.

HORSEGREASE COWPOX KEPT OUT OF SIGHT.

As evidence of how completely Jenner's prescription of horsegrease cowpox was put out of sight, I may refer to the treatise of Dr. Willan *On Vaccine Inoculation*, published in 1806, wherein all that was thought important concerning the new practice was set forth; and although Jenner was freely cited, yet neither horsegrease nor horsegrease cowpox was referred to from the first page to the last. Instead, cowpox, after the fancy of the dairymaids, was exalted as the true prophylactic, apparently without a suspicion of its questionable character.

As I have said, Jenner not only offered no resistance to this amazing transformation, but conformed to it, and assumed the issue as his own. Since the public preferred cowpox to horsegrease cowpox, he saw no reason why he should object, especially as the same foolish public lusted after some one to worship for their deliverance from the plague of variolation. The world resounded with praises of the immortal Jenner, the saviour of mankind from smallpox. Enveloped in the smoke of such incense, it is scarcely surprising that the idol came to believe that his worshippers knew him better than he did himself.

SPURIOUS COWPOX.

The promise of vaccination, its absolute security and harmlessness, was speedily belied. The vaccinated caught smallpox; they fell sick after the operation; they were afflicted with eruptions and swellings; they died. These mishaps were at first denied—stoutly denied; and when denial was no longer possible, it was attempted to explain them away. The cowpox used could not have been genuine cowpox, but spurious; and for awhile spurious cowpox did yeoman's service in the way of

apology; but by-and-by the excuse began to work more harm than good. Mishaps were so numerous that people became afraid of this omnipresent spurious cowpox, and to ask what it was, and how it could be avoided. How can there be spurious pox? Whoever heard of spurious disease? Milkmen vend spurious milk, grocers spurious sugar, smashers spurious coin; but surely cows are not to be numbered with such malefactors as producers of spurious pox! The thing was absurd on its face, and absurd it proved. When Jenner was under examination by a committee of the College of Physicians in 1806, he was pressed hard for a definition of spurious cowpox, when he "owned up." He knew nothing of spurious cowpox. The words had been employed, not to describe any irregularity on the part of the cow, but certain irregularities in the action of cowpox on the part of the vaccinated: which was to say that when the vaccinated recovered creditably and did not catch smallpox, the cowpox was genuine; but when the sequences were otherwise, why then it was spurious! Ingenious and convenient, was it not?

HORSE VIRUS VINDICATED.

Reverting to Jenner's suppression of the origin of cowpox in horsegrease, it may be suggested that he had changed his mind: but he had not changed his mind. As observed, various attempts were made to inoculate cows with horsegrease, and that these attempts were failures; but subsequent attempts were successful. Tanner, a veterinarian, of Rockhampton, Gloucestershire, succeeded to Jenner's complete satisfaction. Dr. Loy of Whitby dispensed with the cow altogether, and inoculated with horsegrease, or horsepox, producing vesicles identical with those of cowpox. The great success, however, in this line was reserved for Sacco of Milan. From the hand of a coachman poisoned with horsegrease he inoculated nine children, and from the virus thus engendered operated on every side. Writing to Jenner in 1803, Sacco said—"It is now admitted and settled

"that grease is the cause of vaccine, and we cannot too "soon alter the designation to equine." De Carro of Vienna received this equine from Sacco, and used it so freely and successfully among the Viennese, that, in his own words, it became impossible to say which of the citizens were equinated and which vaccinated.

What did Jenner make of these confirmations? He was adjudged mistaken in asserting that the cowpox good against smallpox was derived from horsegrease. Did he appeal with triumph to the evidence of Sacco, and say, "You thought me wrong, but see, I was right!" Not he. He kept silence. He consented to be treated as in error. He stood by and allowed cowpox to be used in which he had no confidence whatever. Nay more. He consented to be rewarded and honoured as the discoverer of a pox (which he did not discover) in which he was without faith, and had at the outset of his career expressly rejected and condemned. He recognised that it was expedient that the connection between horsegrease and cowpox should be denied. He had his bill to settle with the English people, and it was not for him to make difficulties. When, however, he had obtained all he could expect from public favour, and had got clear of London and the oppression of its savants, why then he resumed the expression of his original opinion; and still further, like Sacco of Milan, he dispensed with the cow, and inoculated straight from the horse. He supplied the National Vaccine Establishment with horse virus; he sent it to Edinburgh; he distributed it among his medical acquaintances; he described it as "the true and "genuine life-preserving fluid." What more need I say? Such was Jenner; such were his tactics; and whoever assumes his defence will assume a task in which he is not to be envied.

WHICH SHALL IT BE?

Jenner died in 1823, and at that date three kinds of virus were in use; first, cowpox from horsegrease or horsepox; second, cowpox; third, horsepox. These of

course were subject to inscrutable modification in transmission from arm to arm: it is the distinct sources we have to recognise. A patient intent on vaccination might have said to himself, Which shall it be? Shall I be cowpoxed? or, shall I be horsepoxed? or, shall I be horsepoxed cowpoxed? How such an inquirer would have been answered had he set his perplexity before his medical adviser, I can only conjecture. Probably he would have been rebuked for his intrusion into matters outside his province. The little girl who quenched the scepticism of her comrade with the dictum, "It is so, for "ma says so; and if it is'nt so, it is so, if ma says so," illustrates the manner of rebuff administered to those who pry into professional mysteries. It is for you to pay and for us to think is a formula by no means limited to ecclesiastics.

SMALLPOX COWPOX.

Jenner was pleased to describe cowpox as a mild form of smallpox; but for what reason, outside his pleasure, he did not explain. Nevertheless the suggestion has borne fruit. When virus has fallen short, it has been asked, Why, if cowpox be mild smallpox, should not cows be inoculated with smallpox, and a crop of virus be raised? Various such attempts have been made, in which Mr. Badcock of Brighton has been especially distinguished. Mr. John Simon, writing in 1857, said, "Mr. "Badcock, from 1840 to the present time, has again and "again derived fresh stocks of vaccine lymph from cows "artificially infected by him; having vaccinated with such "lymph more than 14,000 persons, and having forwarded "supplies of it to more than 400 medical practitioners.' When it is remembered that virus for half a dozen or more vaccinations is taken from a single arm, and that this process of reproduction is repeated every week, some idea may be formed of the extent to which this smallpox cowpox has been diffused over the country.

The original assertion that vaccination conferred life-long immunity from smallpox was unwillingly abandoned

under stress of experience, until no respectable practitioner pretended that the rite afforded more than a partial or temporary security. In promotion of smallpox cowpox, however, Jenner's most extravagant claims were revived. In Mr. Simon's words, for the recipient of smallpox cowpox, "Neither renewed vaccination, nor "inoculation with smallpox, nor the closest contact and "co-habitation with smallpox patients, will occasion him "to betray any remnant of susceptibility to infection." Untrue even of variolation, it is unnecessary to controvert such a figment: it suffices to place it on record.

The hypothesis was, that smallpox inoculated on the cow lost somewhat of its virulence; but if so, why should not such cowpox inoculated on man resume its virulence? We are apt to forget that the nature of things is not controlled by our wishes, and that our interest in the conversion of smallpox into cowpox, and its maintenance as cowpox, is no warrant for fulfilment. I may also remark that though smallpox cowpox has entered so largely into currency, there is no evidence to what extent it has displaced the preceding issues of horsegrease cowpox, cowpox and horsepox. So far as we know, they are all existent in the common blood, indistinguishable, the stronger surviving, the weaker dying out: nobody knows, nor can know.

CONDEMNATION OF SMALLPOX COWPOX.

That smallpox cowpox is in any sense cowpox is, however, widely disputed, much confidence being placed in the researches of the Lyons Commission in 1855, presided over by M. Chaveau. This Commission, says Dr. Charles Cameron, "proved incontestably that small-"pox can no more be converted into cowpox by passing it "through a cow than by stunting an oak it can be con-"verted into a gooseberry bush." Cowpox, it is held, is a disease of the cow, with no relation to smallpox. The vesicles of each may be apparently identical, as are the vesicles excited by the application of tartar emetic; but that is no proof of essential identity. According to Dr.

George Wyld, "Smallpox inoculation of the heifer pro-
"duces not vaccinia, but a modified smallpox, capable of
"spreading smallpox among human beings by infection;"
and Dr. Cameron boldly attributes the recent increase of
smallpox to the use of smallpox cowpox for vaccination.

Nor is Dr. Cameron singular in this opinion. Some time ago, the Galway Guardians ran short of virus for vaccination, when it was proposed to inoculate a calf with smallpox. As soon as the Local Government Board in Dublin became aware of the project, it was forbidden. Why? Here is the deliverance of the Secretary—
"Because smallpox virus taken from the calf would
"communicate that disease to the human subject, and be
"thereby a fertile source of propagating the disease; and
"would, moreover, render the operator liable to prosecu-
"tion under the Act prohibiting inoculation with small-
"pox." Thus the virus current in England, and credited with miraculous virtue by Simon, is denounced as dangerous and its use unlawful in Ireland!

COWPOX REVIVED.

The constant disasters of vaccination, the certain and suspected communication of human diseases with the virus propagated from arm to arm, have induced a wide resort to cowpox under the designation of "animal
"vaccination," in contempt of the fact that disease in cattle is as rife as among men, and inoculable. Still the dread of the invaccination of syphilis is so intense, and so justifiable, that other risks are encountered if that may be avoided.

This cowpox is commended as "pure lymph from the calf," a sweet periphrase with a savour of Daphne and Chloe, of Flora and the country green—a periphrase used in craft or ignorance, "pure lymph" being as incapable of producing vaccinia as pure milk or pure saliva. The prescription takes us back to Jenner's time and Jenner's procedure. As has been said, the Gloucestershire dairymaids believed that after cowpox they were safe from smallpox, and that Jenner was much impressed

with their belief until he discovered that it was untrue. Had he found it true, he might have advertised the prophylactic thirty years in advance of the publication of his *Inquiry;* but if anything was certain, this was certain, that cowpox did not avert smallpox. Satisfied that cowpox *per se* was of no avail against smallpox, he defined a variety of cowpox generated by the application of horsegrease, to which he was pleased to ascribe sovereign efficacy. Why, I ask, did he discriminate and prescribe that variety of cowpox if cowpox *per se* was effective? The question answers itself. I will not say the cowpoxers treat Jenner's evidence with disrespect; for such is their ignorance, that I question if they are aware of its existence; moreover, that which is undesirable to know, is instinctively avoided and kept out of sight. They recommend their "lymph" as wonderfully mild, being attended with no erysipelas, the pest of arm-to-arm vaccination — a description that tallies exactly with Jenner's of impotent cowpox. "The pustules," says Jenner, "are of a much milder nature" than those of horsegrease cowpox. "*No erysipelas attends them*, and "they are incapable of producing any specific effect on "the human constitution."

A COWPOX CHARLATAN.

Yet, incredible as it may appear, it is with the praise of this impotent cowpox, attended with no erysipelas, that the public have been deafened, and for which the most extravagant assertions are made. Dr. Martin, one of the chief producers and vendors of the article, appeared at the British Medical Association in 1881, saying, "I am called upon at times, at the very "shortest notice, to vaccinate whole cities; and when I "left America, I had just completed the vaccination of "the city of New Haven. The custom is to send for me, "or my son, wherever smallpox breaks out, with orders "to vaccinate at once the entire population of the city, "town, or neighbourhood. It is done immediately, the

"result being that an epidemic is completely stopped in "a week."

Thus spoke the charlatan, with the acquiescence of the medical assembly. When churchmen deplore the scepticism of the age, and the decay of faith, it is to be observed that the habit of mind is limited to certain modes of opinion, and that in general we are as credulous as ever. Human nature in its structure is curiously immutable. Wherein is the advantage to disbelieve in witchcraft and to believe that epidemics of smallpox can be stopped with cowpox?

A DECOROUS UNANIMITY.

Such are the leading varieties of virus used for vaccination—starting with Jenner's horsegrease cowpox, then cowpox, then horsepox, then smallpox cowpox, and finishing with cowpox revived; each of them inscrutably modified in transit from child to child and from beast to beast. We are continually hearing of miracles wrought by vaccination in the past and present —especially the past, at home and abroad—especially abroad, the assumption being that vaccination is, and has been, everywhere the same. On the contrary, the condition precedent to serious consideration of any vaccine miracle is a definition of the variety of vaccination practised. It is, we admit, convenient for the administrators of the rite that it should pass for uniform, however multiform; for the practice has become a great and lucrative business—a world-wide poll-tax; and whatever the internal differences of the priesthood, it is their obvious interest to exhibit a decorous unanimity in presence of their customers. Hence the uneasiness recently excited by indiscreet advocates of "pure lymph "from the calf" has been judiciously allayed, not by resistance, but by concession and damnation with faint praise; the commercial instinct dictating caution, for if the public did get behind the professional screen, and discovered the mysteries of pox, what might not befall the craft of vaccination!

JENNER'S SUCCESSIVE DISCLAIMERS.

The story of vaccination is a story of failures, and as each failure has become manifest, it has been more or less artfully apologised for.

Much is given to assurance. People like infallible prescriptions. They prefer an unequivocal lie to an equivocal answer. This adventurers understand, and discourse accordingly. Hence when Jenner solicited Parliament for largess, he did so in no doubtful terms. He boldly declared that cowpox was "inoculated on the "human frame with the most perfect ease and safety," and was "attended with the singularly beneficial effect "of rendering through life the person so inoculated per- "fectly secure from the infection of smallpox." Again he said, "The human frame, when once it has felt the in- "fluence of genuine cowpox, is never afterwards, at any "period of its existence, assailable by smallpox."

It is needless to point out that Jenner was without warrant for his assertions. His experience did not cover more than a few years; and he could not, therefore, know that his specific would secure its subjects from smallpox for life. He believed, or affected to believe, his own assurance, and assurance being infectious, it widely spread. The inoculation of cowpox became fashionable among busybodies, male and female. Ladies especially were numbered among Jenner's favourites and experts, operating, as he described, "with a light hand." Cobbett relates, "Gentlemen and ladies made the beastly "commodity a pocket companion; and if a cottager's child "were seen by them on a common (in Hampshire at least), "and did not quickly take to its heels, it was certain to "carry off more or less of the disease of the cow."

It so happened that prior to the introduction of vaccination, a marked decline in the prevalence of smallpox had set in, and for the continuance of this decline the vaccinators took credit. "See," they cried, "see what "*we* are doing!" But they failed to observe that the decline prevailed among millions who did not participate

in the cowpox salvation. Soon, however, cases of smallpox among the vaccinated began to be reported. At first they were denied. They were impossible. When the evidence became too strong for contradiction, it was said, "There must have been some mistake about the "vaccination; for it is incredible that any one can be pro- "perly vaccinated and have smallpox: the human frame, "when once it has felt the influence of genuine cowpox, "is never afterwards, at any period of its existence assail- "able by smallpox." Either some carelessness on the part of the vaccinator, or some defect in the cowpox served for a while to reassure the faithful; but ultimately these reassurances utterly broke down. Persons vaccinated by Jenner himself caught smallpox and died of smallpox. Then said Jenner, "I never pretended that vaccination "was more than equivalent to an attack of smallpox, "and smallpox after smallpox is far from being a rare "phenomenon; indeed, there are hundreds of cases on "record, and inquiry is continually bringing fresh ones "to light." True; very true; but what then of the assurance and prediction under which £30,000 of the people's money had been pocketed—"The human frame, "when once it has felt the influence of genuine cowpox, is "never afterwards, at any period of its existence, assail- "able by smallpox"? Nay, more; Jenner descended even lower. He not only likened vaccination to smallpox, but to variolation, that is to the former practice of inoculation with smallpox; and as, he said, variolation was well known to be no sure defence against smallpox, why should people be offended when smallpox in like manner occasionally followed vaccination? Why, indeed! but then the promise ran—"The human frame when "once it has felt the influence of genuine cowpox, is never "afterwards, at any period of its existence, assailable by "smallpox." In a letter to his friend Moore in 1810, Jenner said, "Cases of smallpox after inoculation are "innumerable." And again, "Thousands might be col- "lected; for every parish in the kingdom can give its "case." And he asked another correspondent, Dunning,

in 1805, "Is it possible that any one can be so absurd as "to argue on the impossibility of smallpox after vaccina- "tion!" And this from Jenner, who had deceived the nation in 1802 with the assurance that, "inoculated cow- "pox was attended with the singularly beneficial effect "of rendering through life the person so inoculated per- "fectly secure from the infection of smallpox"!

Such was Jenner; such his inconsistency; and such the admissions he was driven to make under stress of failures many and manifest.

SMALLPOX MADE MILDER.

As vaccination failed to afford the protection originally guaranteed, various explanations were devised to enable those who had talked too loftily to eat humble pie without painful observation. One of the commonest excuses was that if vaccination did not prevent smallpox it made it milder; and inasmuch as no one knew, or could know, how severe any attack of smallpox would have been *without* vaccination, it was an assertion as indisputable as the reverse—namely, that vaccination not only made smallpox severer, but frequently induced the disease. There are many assertions with which there is no reckoning, for it would require omniscience to check them. Let us beware of such assertions. Let us neither make them, nor suffer ourselves to be imposed upon by them.

PUNCTURES, ONE OR SEVERAL.

Another excuse was advanced in the report of the National Vaccine Establishment in 1814. It was said the failures in vaccination appeared to result from the practice of making only one puncture for the insertion of virus. One puncture ineffective! Why, if one puncture were ineffective, how were the early miracles of vaccination to be accounted for, all of which had been effected by means of single punctures?

MR. RIGBY'S PROTEST.

There was in those days a surgeon of eminence in Norwich, Edward Rigby, and he at once entered his protest

against the novel doctrine. Writing to the *Medical and Physical Journal* of August, 1814, he said, "No physiological reason is assigned for this, and I believe it "would be difficult to prove that a single perfect vesicle, "which goes through the usual stages and exhibits the "characteristic appearances of this singular disease, can "be less the effect of a constitutional affection than any "given number would be. . . It cannot surely be doubted "that a single perfect vesicle affords as complete security "against Variola as any indefinite number; and, if so, "there would seem to be an obvious objection to unnecessarily multiplying the vesicles, *which in all cases "go through a high degree of inflammation, are often "attended with painful tumefaction and even suppuration in the axilla*, and, if exposed in the later stages "to any act of violence, *are apt to assume a very disagreeable ulceration*, more especially as young children, "now the principal subjects of vaccination, are most "liable to suffer in this way." Rigby had the better side of the argument. As he observed, no physiological reason was assigned for the recommendation of plural punctures; nor was any such reason ever assigned. It is the rationale of vaccination that a virus is injected into the system which begets a fever equivalent to an attack of smallpox; and as smallpox rarely recurs in a lifetime, it is hoped that Nature may graciously recognise the substitute for the reality. Organic poisons such as vaccine operate like fire or ferment. Quantity is of no account. So that the fever be kindled, excess is waste. A scratch at a dissection is as deadly as a gash. One bite of a mad dog is as likely to beget hydrophobia as a dozen. The sting of a cobra may be almost invisible, but the puncture is enough for death. Sir James Paget says of vaccine virus that "inserted once, "in almost infinitely small quantity, yet by multiplying "itself, or otherwise affecting all the blood, it alters it "once for all."

Such is the rationale of vaccination, and if I were a vaccinator, I should hold the position assumed by Rigby,

and maintain that one puncture is as effective as a dozen, inasmuch as with one it is possible to excite that fever which is the essential of vaccination; adding, in Rigby's words, that as one puncture is in all cases attended with a high degree of inflammation, and often with painful tumefaction, and even suppuration in the arm-pits, which in case of violence are apt to pass into very disagreeable ulceration, especially in young children, it is most undesirable to increase the number of such dangerous wounds.

MR. (MARKS) MARSON.

I do not know that the condemnation of single punctures at that time, seventy years ago, had much effect. Two punctures became common, chiefly to guard against the possible failure of one. It is of late years that the resort to many punctures has become fashionable. Mr. Robert Lowe, now Lord Sherbrooke, in the House of Commons in 1861 spoke of "the beautiful discovery which "had been made, that the security of vaccination may be "almost indefinitely increased by multiplying the num-"ber of punctures"! The chief author of this remarkable discovery was Mr. Marson, for many years surgeon of the Smallpox Hospital at Highgate. He estimated the efficacy of vaccination by marks, and made so much of marks that I usually think of him as Marks Marson. He said—"A good vaccination is when persons have been "vaccinated in four or more places leaving good cica-"trices. I define a good cicatrix in this way: a good "vaccine cicatrix may be described as distinct, foveated, "dotted, or indented, in some instances radiated, and hav-"ing a well, or tolerably well, defined edge. An indifferent "cicatrix is indistinct, smooth, without indentation, and "with an irregular or ill-defined edge. When I find that "a person has been vaccinated in at least four places, "leaving good marks of the kind which I have described, "that person invariably, *or almost invariably*, has small-"pox in a very mild form."

Reading a statement like this, we revert to the ration-

ale of vaccination, and ask what can marks have to do with its efficacy? Remember, Marson offered no explanation of his statement. He was satisfied to say thus and thus have I observed, and you may take my word for it. But in science we take no man's word. We must see, or, like Trelawney's Cornishmen, we must know the reason why. Marson appeared before the House of Commons' Vaccination Committee in 1871, and set forth his marks doctrine with all the qualifications and inconsistencies which characterise the victim of a fad in contact with facts which his fad fails to include or account for.

MR. WHEELER'S RESEARCHES.

Fatal cases of smallpox are confluent cases, and in confluent cases vaccination marks rarely show up so as to answer to Marson's description of marks distinct, foveated, dotted, or indented, with a well, or tolerably well-defined edge. And in this matter our acute and industrious friend, Mr. Alexander Wheeler, has explored the records of the the Smallpox Hospitals, and proved that vaccination marks many or vaccination marks few have no influence whatever on the character or issue of smallpox. As Mr. Wheeler shows, the classification of smallpox into discrete and confluent is the only clue to the right estimation of the fatality of the disease. Smallpox in the discrete form, that is, when the pustules are distinct and separate, is not dangerous when uncomplicated with other disease, the overwhelming majority of patients recovering, vaccinated or unvaccinated. The contest between life and death is waged among the confluent cases, where the pustules are so close that they run together; and it is on these confluent cases, and the conditions and antecedents of the sufferers, that attention should be concentrated. There is a third form of smallpox, the malignant, chiefly confined to persons of irregular life, which is almost invariably fatal, and, as vaccinators themselves allow, vaccination in malignant smallpox affords no ódds to its victims.

MR. ROBINSON'S OPINION.

Nevertheless, as Mr. Enoch Robinson has pointed out, there *is* something to be said for what Marson called good vaccination marks. The bit of reality that constitutes the basis of the marks illusion is this, that a well-formed vaccine cicatrix represents a strong vitality with vigorous healing power; whilst an ill-formed cicatrix represents a contrary habit of body; and, *pari passu*, those who heal well under vaccination stand likely to make the best recoveries in the event of smallpox. Good marks are simply notes of good constitutions, and the rest follows. Aught beyond is mere medical rubbish, on a par with faith in omens and divination in tea-cups.

CRUELTY OF MARKING.

Vaccination, in whatever form, is bad, but this faith in marks aggravates its cruelty. Mr. Claremont, vaccinator for St. Pancras, operates on infants by the thousand, and inflicts on each four marks. At a recent inquest on an infant, the victim of his handiwork, I heard him say, "The mothers nearly always protest." Of course they do. What kind of mothers would they be if they did not protest! Apart from the venom, the shock to an infant's life from such wounds is very serious. Mr. Young was called the other day to see a dying infant vaccinated by this Claremont. Previous to vaccination it was perfectly healthy, but never afterwards. From the time of the operation it fell under a blight. "In its "coffin," said Mr. Young, "it lay like a child's doll—the "poor babe had wasted away."

I was glad to see in the *Times* about a year ago a letter from Dr. Allnatt of Cheltenham protesting against the cruelty of vaccination as practised upon the children of the poor. He recalled the days when he was a pupil of Dr. Walker, in 1825-26, and his instructions were to dip the point of the lancet into the fresh lymph, and insert it tenderly without drawing blood, under the cutis of the forearm, and protect the wound with a slight compress.

"But the case is altered now," he says. "Some of the "vaccinators use real instruments of torture. Ivory "points are driven into the flesh, and wounds ensue which "become erysipelatous, and in the delicate constitutions "of weakly children fatal."

The case is altered now, says Dr. Allnatt; but why is the case altered now? Why, because, under the old terms vaccination was more and more seen to be no defence against smallpox; and to preserve the rite, and the gains from the rite, the marks doctrine was invented, or, rather, revived, and hailed as a sort of revelation from heaven.

REVACCINATION INTRODUCED.

When vaccination was seen to be no preventive of smallpox, it was conjectured that it might require renewal, a suggestion which distressed Jenner exceedingly. It was calculated, he said, "to do unspeakable mischief," depriving his discovery "of more than half its virtues." But as experience continued to belie the claim made for vaccination as a permanent defence, it was natural that those interested in its performance should endeavour to retrieve its waning credit. Thus revaccination began to be practised. Between 1830 and 1835 there were 13,861 revaccinations effected in the army of Wurtemburg. Dr. Holland (subsequently Sir Henry) after recording the accumulating proofs of the futility of vaccination in 1839, recommended revaccination as a probable resource, and the recommendation gradually acquired authority. The *London Medical Gazette* in 1844 boldly proclaimed, "Revaccinate, revaccinate!" But so late as 1851 the National Vaccine Establishment protested against the innovation, saying, "The restriction of the protective "power of vaccination to any age, or to any term of "years, is an hypothesis contradicted by experience and "wholly unsupported by analogy." Whatever the experience, however, and whatever the analogy, there was the indisputable fact, that vaccination in most unimpeachable form did not avert smallpox, and that if the public

faith and the public money were to be retained some fresh artifice was essential. It was hard to surrender the original claim of the equivalence of vaccination to smallpox; but it needs must when the devil drives; and so it has come to be admitted that Jenner was mistaken, and the vaccine rite to be effectual must be renewed.

VACCINISATION.

Dr. Colin expresses what is now the common medical opinion in saying, "We must not stop at a single vaccina-" tion. We must establish the firm conviction in the public " mind, that vaccine prophylaxy is only real and complete " when periodically renewed;" and Dr. Warlomont, chief of Belgian vaccinators, goes yet further in advising and practising what he calls *Vaccinisation;* which is, that every subject of the rite be vaccinated again and again until vesicles cease to respond to the insertion of virus. Then, and then only, can the victim be guaranteed from smallpox! Such are the shifts to which vaccinators have been reduced. If their insurance were valid, the premium would exceed the principal, whilst there is no reason to believe the new security is a whit better than the old. In these frantic prescriptions we see the quackery in its death-throes.

ABSURDITY OF REVACCINATION.

As for revaccination keeping off smallpox, it is absurd, and ought to be known for absurd. The chief incidence of smallpox is among the young, in whom it cannot be pretended that the influence of primary vaccination is exhausted. The subjects of revaccination are passing, or have passed out of the smallpox age; and as the statistics of the army and navy prove, our soldiers and sailors are no more exempt from smallpox than the unrevaccinated civil population of corresponding years. In this matter, the old words stand true, *Populus vult decipi; decipiatur.*

THE REDUCTION OF SMALLPOX.

From whatever side regarded, the original and successive claims made for vaccination are seen to have broken down; but a practice endowed and enforced as a poll-tax for the benefit of the medical profession is not lightly surrendered. Instead a variety of defences, more or less ingenious, are thrown out.

I.—One of these is the reduction of smallpox. It is said, "Smallpox was once a common disease, and is now "a comparatively rare one—How are we to account for "this improvement otherwise than by the introduction "of vaccination?"

The answer is, that smallpox was declining before vaccination was introduced, and that, too, in spite of the extensive culture of the disease by variolation; and the decline continued during the first part of the present century whilst as yet nine-tenths of the people were unvaccinated. Several diseases once common have abated or disappeared; and why should we attribute to an incommensurate cause a similar abatement in smallpox? Leprosy, once extensively prevalent in England, has disappeared. Why? It died out gradually; but suppose some rite, analogous to vaccination, had been brought into vogue contemporaneously with its decline, would not the rite have had the credit, and would not its practitioners have called the world to witness the success of their prescription?

HAS VACCINATION SAVED LIFE?

II.—In the same line of defence, we have the claim made for an extraordinary salvation of human life. Thus Sir Spencer Wells in a recent speech observed, "Jenner is immortal as a benefactor of mankind. It "may not be generally known, but it is true, that Jenner "has saved, is now saving, and will continue to save in all "coming ages, more lives in one generation than were "destroyed in all the wars of Napoleon."

The answer to such a statement is to call for proof of the lives saved. There is no proof. At the close of last

century, 20 per cent. of the mortality of Glasgow was due to smallpox. Smallpox abated, but did mortality abate? Not in the least. Dr. Robert Watt in 1813 recorded the fact with amazement over it. And what was true of Glasgow was true of other cities and other populations. There may be a cessation of smallpox, but (unless the result of sanitary improvement) the work of death is merely transferred to cognate agencies. There is no saving of life. What was a mystery to Watt is less of a mystery since the development of sanitary science. Zymotic disease in its various forms is a definite evolution from definite insanitary conditions. It is not affected by medical repression, nor by the spontaneous substitution of one variety of fever for another. In the the words of Dr. Farr, "To save people from smallpox is "not enough whilst exposed to other forms of disease. "Thus in a garden where the flowers are neglected, to "keep off thistle-down merely leaves the ground open to "the world of surrounding weeds." To lower the zymotic death-rate it is necessary to reduce the conditions in which zymotic disease is generated. Citing Dr. Farr once more, "To operate on mortality, protection against "every one of the fatal zymotic diseases is required; "otherwise the suppression of one disease-element opens "the way for others." Dr. Watt and Dr. Farr alike believed that vaccination stopped smallpox, and alike realised that the disappearance of smallpox was accompanied with no saving of life. Sir Spencer Wells is of a contrary opinion, which he shares with a number of people who prefer the free play of the prejudiced imagination to the sobriety of exact information.

WHO ARE THE UNVACCINATED?

III.—Then we are asked to believe that though vaccination may not keep off smallpox, it makes it milder, and in proof we are entertained with low rates of mortality among the vaccinated and high rates among the unvaccinated.

We reply, to make a fair comparison between the vac-

cinated and the unvaccinated, it would be necessary to compare class with class, physique with physique, age with age. In other words, the subjects of smallpox should be constitutionally equal, their difference being limited to vaccination present or vaccination absent. So much is obvious.

But when or where has such comparison been even attempted? Nor would it be easily practicable: for the vaccinated comprise the best portion of the community, physically; but who are the unvaccinated? They are the waifs and strays of civilisation, the offspring of the miserable and the vagrant, who, without fixed domicile, escape the attention of the vaccination officer. These, whatever their ailment, whether measles, pneumonia, diarrhœa, would exhibit a higher rate of mortality than the vaccinated; but would it therefore be safe to argue that vaccination was not only good against smallpox, but against measles, pneumonia, and diarrhœa? Yet it is these, the lowest physically and most neglected of the population, who drift into smallpox hospitals, who are exhibited as fearful examples of the neglect of vaccination. It might be added, they are unbaptised as well as unvaccinated, and probably the one defect may be as prejudicial as the other.

UNVACCINATED DEATH-RATES.

Our contention does not end here. Such is the prejudice in favour of vaccination that a bad case of smallpox is assumed to be an unvaccinated case. Over and over again has it been proved that vaccinated patients dead of smallpox have been registered as unvaccinated, their death being taken as evidence of the absence of the saving rite. Again in severe smallpox, when vaccination marks are invisible, the sufferer is frequently set down as unvaccinated. Dr. Russell, of the Glasgow Hospital, relates that patients entered as unvaccinated, showed excellent marks when detained for convalescence Had they died, they would have gone to swell the ranks of fearful examples.

It is thus that the high death-rates of the unvaccinated are accounted for, the framers of hospital reports appearing to vie with each other in extravagance. We are continually adjured in the newspapers to confess our folly and repent, because 40 or 60 or 80 per cent. of the unvaccinated have perished in this or that hospital *because unvaccinated.* To us such statistics have fraud written on their face, and the more they are sworn to, the more unscrupulous do their vendors reveal themselves. When all were unvaccinated last century, the hospital death-rate of smallpox ranged about 18 per cent. Now we are asked to believe that death-rate has doubled, trebled, quadrupled, and for no other reason apparently than to make for the glory of vaccination.

NURSES EXEMPT FROM SMALLPOX.

IV.—It is further said that nurses in smallpox hospitals never contract smallpox because they are revaccinated.

To establish this assertion, it would be necessary to prove that prior to the introduction of vaccination, or rather of revaccination, it was common for nurses to fall victims to the disease. The attempt is not made, and wisely, for failure would be conspicuous. Jenner never recommended vaccination as a protective for nurses. Their general immunity, along with that of physicians, is noted throughout our older medical literature; nor is the reason far to seek. Smallpox is predominantly an affection of the young, and it is no more surprising that a nurse should be proof against it than that she should be proof against measles, whooping cough, or scarlet fever. Nurses occasionally incur these maladies, and they occasionally incur smallpox.

If revaccination preserves nurses from smallpox, to which they are exposed in the intensest form, it should much more preserve soldiers, sailors, policemen and postmen, whose exposure is incomparably less intense; yet these servants of the state (as already observed) are as liable to smallpox as their unrevaccinated fellow citizens of correspondent ages.

To speak plainly, the selection of a vocation so arduous and repulsive, marks off a smallpox nurse as unimpressionable, and little apt to catch anything. Smallpox, too, is like tobacco: custom fortifies the constitution against its immediate effects. If the atmosphere of a smallpox hospital is endured for a fortnight, it is likely to continue endurable. On the other hand, if a volunteer sickens on probation, she is not reckoned among nurses. Lastly, many nurses have entered hospitals as patients, and have accepted service in default of other occupation. On these grounds, the nurse argument breaks down irretrievably. At first sight, it seems something, but on scrutiny it proves nothing.

POCK-MARKED FACES.

V.—Another favourite argument for vaccination is the disappearance of pock-marked faces. People say when they were young such faces were common, whilst now they are rare; and demand, What can have wrought the change if not vaccination?

A medical man at a public meeting tried to dispose of some statistics adverse to vaccination by saying that statistics could be made to prove anything; and presently went on to relate that when his mother was a girl every third person she met was pock-marked. She had told him so repeatedly, and there was no doubt about her accuracy. Thus statistics in general were untrustworthy, but his mother's statistic was unquestionable.

We need not hesitate to allow that when smallpox was common and cultivated pock-marked faces were more numerous: but we must not forget that whether a patient is marked or not marked is very much a matter of treatment. Many at this day pass through smallpox, and severe smallpox, and escape unmarked, simply because those who have care of them observe certain precautions. It was different in former times. The treatment of smallpox was atrocious. The sick-room was made pestiferous by the exclusion of air and the maintenance of high temperature. The patient sweltered

under bed-clothes. He was neither allowed to wash nor change his linen. He was drenched with physic and stimulants. In hospitals, patients were stuck two or or three in a bed, and stewed together. If, under such circumstances, the sick were restored to life pock-marked, what wonder! Patients who were fortunate enough to be sufficiently let alone, stood the best chance of recovery.

Besides smallpox was not equally diffused. In some places it was endemic; in others it appeared at intervals; and in others it was hardly known. The smallpox death-rate of Glasgow was double that of London; and we may therefore infer that pock-marked faces were twice as numerous in Glasgow as in London. Hence when recollections are appealed to, they should be localised. What might be true of one population might be grossly untrue of another.

It has been observed that smallpox was falling off toward the close of last century, and the decline accelerated in the present century, irrespective of vaccination. An excellent illustration of this reduction of smallpox is furnished by the reports of the National Vaccine Establishment for 1822, 1825, and 1837, where the disappearance of pock-marked faces from London is triumphantly recorded and claimed as a result of vaccination. In 1831 Dr. Epps, director of the Royal Jennerian Society, made the like observation and the like claim, saying, "Seldom "are persons now seen blind from smallpox. Seldom is "the pitted and disfigured face now beheld;" adding, "but seldom do mankind inquire for the cause. It is "vaccination. It is vaccination which preserves the soft "and rounded cheek of innocence, and the still more "captivating form of female loveliness." Inasmuch as not ten per cent. of the population were vaccinated in 1831, the claim made for vaccination was absurd, whilst the disappearance of pock-marked faces was sufficiently explicable by the reduced prevalence of smallpox.

Where then is the argument for vaccination from the disappearance of pock-marked faces? When anyone under seventy proceeds to recite the legend, "There is

"no use in arguing against vaccination, for when I was "young every third or fourth person was pock-marked," etc., etc., the effect is droll. It shows how prone we are to fancy we have seen what we think we ought to have seen. Droller still it is when striplings of five-and-twenty and thirty profess the same experience—"When "I was a lad," and so forth and so forth. There is matter for reflection as well as for laughter in the hallucination.

Nevertheless, if pock-marked faces are not so common as they must have been a century ago, they are by no means rare; and if the argument for vaccination were valid, the pock-marked would be unvaccinated. But are they? Those who will take pains to inquire will find that almost invariably they have been vaccinated, and some of them repeatedly, the vaccination having as it were induced the smallpox.

VACCINIA A REAL DISEASE.

Thus far we have chiefly dealt with vaccination as if its fault were limited to failure to prevent smallpox; but vaccination is more than an ineffective incantation. It is the induction of an acute specific disease. The prime note of vaccination is erysipelas. "The cowpox inflam- "mation," said Jenner, "is always of the erysipelatous "kind." He held that cowpox unattended with erysipelas was "incapable of producing any specific effect on "the human constitution." If it is supposed that Jenner is antiquated, we may refer to a distinguished contemporary. Mr. John Simon replying to the question, "Whether properly performed vaccination is an abso- "lutely inoffensive proceeding?" answers decisively, "Not "at all; nor does it pretend to be so." The rationale of vaccination is that it communicates a mild variety of smallpox, and that with a little of the devil we buy off the entire devil. Dr. Ballard, Medical Officer to the Local Government Board, in his treatise, *Vaccination: its Value and Alleged Dangers*, says, "Vaccination is not a "thing to be trifled with, or to be made light of; it is "not to be undertaken thoughtlessly, or without due

"consideration of the patient, his mode of life, and the "circumstances of season and of place. Surgeon and "patient should both carry in their minds the regulating "thought, that the one is engaged in communicating, the "other in receiving into his system, a *real* disease—as "truly a disease as smallpox or measles; a disease which, "mild and gentle as its progress may usually be, yet, "nevertheless, now and then, like every other exanthe- "matous malady, asserts its character by an unusual "exhibition of virulence."

VACCINAL FATALITIES.

Here we have Vaccinia defined as disease with precautions for its safe reception; yet withal it is allowed it may assert itself with virulence. But where do we find any precautions exercised in the vaccination of the poor? —that is to say, of the vast majority. Precautions are not only disregarded, they are unknown, they are impracticable. Infants of all sorts and conditions are operated on as recklessly as sheep are marked. Whether they live or die is matter of official indifference, whilst each is warrant for an official fee. Sir Joseph Pease, speaking in the House of Commons, said, "The President "of the Local Government Board cannot deny that chil- "dren die under the operation of the Vaccination Acts in "a wholesale way." Vaccination conveys an acute specific disease (having a definite course to run like smallpox or other fever) which, whether by careless treatment, or superinduced, or latent disease, is frequently attended with serious and fatal issues. Hence it is that vaccination is dreaded and detested by the poor on whom it is inflicted without parley or mitigation; in itself a bearer of illness, it is likewise a cruel aggravation of weakness and illness. When the poor complain that their children are injured or slain by vaccination, they are officially informed they are mistaken. Dr. Stevens, a well-known familiar of the vaccination office, says he has seen more vaccination than any man, and has yet to witness the least injury from the practice. Variolators used to say

the same of their practice until vaccinators arose and convicted them of lying. Coroner Lankester held that vaccination was not a cause of death "recognised by law," and was therefore an impossible cause. Such prevarication is mockery. True it is that, if a child dies of vaccination, it dies of erysipelas, or pycemia, or diarrhœa, and it is easy enough to ignore the primary cause and assert the secondary; but I would ask, How else can death ensue from vaccination than by erysipelas, pycemia, diarrhœa, or similar sequelæ? If vaccination kills a child, how otherwise could it kill? Even should death occur directly from surgical shock, it would be said, the child did not die of vaccination, but from lack of vigour to sustain a trivial operation. The Sangrado of the Stevens pattern is never without a shuffle.

VACCINIA MODIFIED IN ITS RECIPIENTS.

It is usual at coroners' inquests on vaccination fatalities to produce children vaccinated at the same time from the same vaccinifer, and to assert that inasmuch as they have made good recoveries, it is impossible that the virus was at fault, and that something else than vaccination must have been the cause of death. The argument often impresses a jury, but it is grossly fallacious. Suppose a mad dog bit six men, and that five escaped injury beyond their wounds and fright, and that one died of rabies, would the escape of the five prove that the death of the sixth was unconnected with the dog? Or suppose an equal potion of gin were administered to six infants, one of whom died and five recovered, would the recovery of the five prove that gin did not kill the sixth? Mr. Stoker writes to the newspapers that he vaccinated twelve other persons with the virus he used for Miss Ellen Terry, and that as no untoward symptoms appeared in the twelve, therefore Miss Terry's whitlow had no connection with her vaccination—and this in spite of the untoward symptoms falling due at the very time that vaccination accounted for them! Any reasons are good for those disposed to be convinced, and who have

settled it in their minds that vaccination is invariably harmless.

No doubt there is virus used for vaccination that is virulent beyond other virus, as there is virus that is comparatively innocuous; but, as Dr. Mead observed more than a century ago, "It is more material into what kind "of body smallpox is infused than out of what it is "taken." The same virus that one constitution may throw off with little effort, may induce disease and death in another. Dr. Joseph Jones, president of the Louisiana Board of Health, relates that "In many cases occurring "in the Confederate Army, the deleterious effects of vac- "cination were clearly referable to the condition of the "forces, and the constitution of the blood of the patients; "for it was observed in a number of instances that the "same lymph from a healthy infant inoculated upon "different individuals produced different results corres- "ponding to the state of the system; in those who were "well fed and robust, producing no ill-effects, whilst "in the soldiers who had been subjected to incessant "fatigue, exposure, and poor diet, the gravest results "followed."

Some constitutions are peculiarly liable to injury from vaccine virus, just as some constitutions cannot endure drugs that others receive without inconvenience. Thus it is that fatalities from vaccination are frequent in certain families. Of these, neither the law nor medical men condescend to take account. Parents often plead in vain for exemption from the rite on the ground that they have already had children injured or slain by its performance; the brutal and unscientific argument running, "How can "vaccination hurt your children when it does not hurt "other people's children?"

VACCINIA *PLUS* OTHER DISEASE.

Nor is the case against vaccination yet complete. The virus used is not only Vaccinia, but more than Vaccinia; for it is impossible to propagate virus from child to child without taking up other qualities. This was clearly

foreseen by the variolators when vaccination was introduced—*they* making it a point to take smallpox for inoculation from *known* and *sound* subjects. They maintained that cowpox transferred indiscriminately from arm to arm *must* acquire and convey constitutional taints; and their prognostication was speedily and grievously fulfilled in the item of syphilis. Notwithstanding, the fact was furiously contested. It was said that parents used vaccination as a screen for their own wickedness; and assertion alternated with denial even to our own day. At last the conflict is at an end. The evidence has grown too multitudinous and deadly for evasion. The invaccination of syphilis is admitted, and any question is reserved for the degree of frequency. Some are pleased to describe the risk as infinitesimal, but their pleasure stands for nothing but itself. Deeds are expressive beyond words. The wide resort to animal vaccination on the Continent and in the United States has but one interpretation. Doctors and patients do not abandon what is easy for what is troublesome, nor incur the risk of the communication of bovine disorders unless under the influence of over-mastering terror.

STATISTICAL EVIDENCE OF EXTRA DISEASE.

Relations of individual experience may be disregarded as untrustworthy, but the broad evidence of national statistics conveys authoritative lessons. Vaccination in England was made compulsory in 1853, stringently so in 1867, and systematically extended to the entire population. If therefore it were true that vaccination often communicates more than Vaccinia, and that it aggravates existent and excites latent disease, the proof must be manifest in the statistics of the Registrar-General. Thus argued Mr. C. H. Hopwood, and accordingly he moved in the House of Commons successively for three Returns, published as follows—VACCINATION, MORTALITY, No. 433, 1877; MORTALITY (GENERAL AND INFANT), No. 76, 1880; and DEATHS (ENGLAND AND WALES), No. 392, 1880.

These Returns, charged with curious and authentic information, are little known, and have been treated with significant silence by the press. Obscurantism is not confined to ecclesiastics. Our valiant journalists who mock at the Index Expurgatorius, and abhor the Russian censorship, are in their little way as ready to act the same part in favour of established prejudice. If facts adverse to the public confidence in vaccination are revealed, it is considered no more than decent to keep them out of sight.

What then is the evidence of Mr. Hopwood's Returns? Briefly this: they clearly illustrate that vaccination does produce, intensify, excite and inoculate disease whose issue is death. The record of infant mortality from fifteen specified diseases related to vaccination stands thus—

Prior to Vaccination Act—1847-53—
Infants died, 1847, - - - 62,619
Out of a population of 17,927,609.

Vaccination Obligatory—1854-67—
Infants died, 1854, - - - 73,000
Do. 1867, - - - 92,827
Out of a population of 20,066,224.

Vaccination Enforced—1868-75—
Infants died, 1868, - - - 96,282
Do. 1875, - - - 106,173
Out of a population of 22,712,266.

Thus, while the population of England and Wales had increased from 18 to 23 millions, the deaths of infants from fifteen diseases had risen from 63,000 to 106,000. Had the mortality kept pace with the population, the deaths in 1875 would only have been 80,000; that is to say, in 1875 there perished in England 26,000 infants who would have lived had vaccination remained as little in vogue as in 1847! The result though startling in the gross is precisely what might have been predicted. The

infancy of a country cannot be systematically diseased, that is vaccinated, without exciting and aggravating other maladies, and thereby enlarging the harvest of death.

VACCINIA AGGRAVATES DISEASE.

The asserted connection of vaccination with other ailments, such as bronchitis, sometimes gives occasion to ignorant ridicule. "Bronchitis," says Sir Lyon Playfair, "has about the same relation to vaccination as "the Goodwin Sands have to Tenterden Steeple." The answer is that the debility produced by vaccination predisposes to affections of the respiratory organs. The human body does not consist of isolated compartments, but is an organised whole, sympathetic in all its parts and functions. Erysipelas, as we have seen, is the primary symptom of inoculated Vaccinia, and diarrhœa is its commonest sequence; and given erysipelas and diarrhœa, what vigour may remain to assist and throw off other ailments? It is not said that certain maladies are communicated by vaccination, but that vaccination contributes to their fatality. An infant that would have survived bronchitis dies of bronchitis *and* vaccination; dies of teething *and* vaccination; dies of convulsions *and* vaccination; dies of whooping-cough *and* vaccination; and so on. Again disease kindles disease, and many a child might outgrow congenital scrofula or phthisis if the latent disorder were not roused by vaccination. For these reasons no doubt need be entertained that were vaccination abolished, the event would be immediately signalised by an extraordinary fall in infant mortality.

ORIGIN OF COMPULSORY VACCINATION.

If vaccination were a voluntary superstition, its prevalence would be sufficiently deplorable; but when we think of it as inflicted on the nation, and pressed on those who know it for an injurious imposture, language is apt to arise which it is expedient to repress. It may

be asked how it came to pass that legislation was ever compromised with a medical prescription, and the answer is not a reassuring one. The initial error was the endowment in 1808 of the National Vaccine Establishment, and the provision of vaccination fees in 1840 out of the poor rate. For the enforcement of vaccination, there never was any popular demand—never the slightest. The public had, however, learnt from sanitarians that a large part of the sickness from which they suffered did not come of fate, but was preventible; and under this novel persuasion the vast expenditure on sanitary works during the past fifty years has been cheerfully incurred. Availing themselves of this favourable disposition in the public mind toward projects in the name of health, certain medical place-hunters operating as the Epidemiological Society contrived to gain the ear of Government and to pass a compulsory Vaccination Act in 1853. The politicians who lent themselves to this transaction disowned any knowledge of vaccination. They acted, they said, under medical advice, and ran the bill through Parliament with little resistance. The Act did not personally concern M.P.'s. If they happened to believe in vaccination, their children received the rite with all recognised precautions. Its enforced application by contract at 1s. or 1s. 6d. per head was reserved for the unenfranchised and unconsulted multitude; whilst the administration of the Act provided place and pay for its ingenious promoters.

RESISTANCE, INFLEXIBLE RESISTANCE.

When an oppressive law is enacted, by whatever strategy or however corruptly, its repeal is no easy matter. The oppressors have won the nine points of possession. The antagonists of the Vaccination Acts nevertheless possess a certain advantage. Some bad laws can only be denounced as it were from a distance; but vaccination touches every household, and can be fought wherever a child is claimed as a victim for the rite.

We abhor the rite. We detest it as an imposture.

We dread it as a danger. We refuse it on any terms. We encourage, we justify, we insist on the duty of rejection. Our contention extends and prospers. In various parts of the country resistance has been rewarded with success. The evil law has been broken down. Freedom has been recovered and freedom is enjoyed. In other parts the struggle for liberty proceeds, and as it proceeds, light is diffused and courage evoked for enlarged resistance. Elsewhere there are vindictive and cruel prosecutions, chiefly of humble folk. "Respected ratepayers," to whom the law is objectionable and its penalties trivial annoyances, are discreetly passed over. Hard, however, is the lot of poor men, who for love of their children affront the dull animosity and ignorance of English Philistines whether as guardians or as magistrates on the bench of injustice. Shortly co-operation for defence and insurance against fines will enable the feeblest and most fearful to maintain his integrity and encounter his pursuers with undaunted front. Parliament, as our statesmen allow, is deaf to the aggrieved until they make themselves intolerable, and to raise ourselves to that pitch must be our end and aim.

COMPULSORY EDUCATION AND VACCINATION.

Many good people are distressed over the operation of this extraordinary law, and sometimes in their perplexity adventure for excuse, "Surely since we compel parents "to educate their children, it cannot be wrong to compel "them to have their children vaccinated."

We answer, education is compulsory so far as it is outside conscience. Compulsion is designed to overcome parental indifference and selfishness: where it confronts serious convictions it is arrested. By general consent the most important part of education is religion; and religion is precisely that part of education which is exempted from compulsion. The law does not even enforce *some* form of religion, so that parents who regard religion as superfluous may not be aggrieved.

What therefore the opponents of vaccination demand

is, that the respect thus accorded to the religious conscience be extended to the scientific conscience—to those who are convinced that vaccination does not prevent smallpox or is an injurious practice. Even allowing it to be a harmless ceremony, resistance would be justifiable. It would be in vain to console a Baptist, forced to convey his child to the parish font, with the assurance that a few drops of water could do no harm. It is not in human nature to submit to the indignity of imposture; and to thousands of Englishmen vaccination is a cruel and degrading imposture, and to punish them for their loyalty to what they think right is every whit as tyrannical as it was for Catholics to persecute Protestants, and Protestants Catholics, and Catholics and Protestants Jews. There is no difference in the terms of intolerance; and there is no difference in the spirit with which this latter-day tyranny is confronted, and that spirit with which religious liberty was vindicated and won.

CONDITIONS OF THE CONFLICT.

To some eyes the conflict is not only arduous; it is hopeless; but we are of a different mind. The conflict may prove even less arduous than it appears; and for these reasons. The law as it stands is perfunctorily defended. No politician answers for it without reluctance. Many allow that a serious mistake was made when legislation was enacted for medical advantage at medical dictation. The Gladstone government proposed to abolish repeated penalties. The central authorities at the Local Government Board make no secret of the insuperable difficulties which attend the administration of the law. They advise concession to its resolute adversaries. They do not reinstate the law where it has broken down. Legislation thus discredited is sure to collapse under broader pressure. The medical support is still weaker; and is chiefly confined to those who represent the trade element of the profession—men who would defend any abuse however flagrant if established and lucrative. It is the custom to laud the immortal

Jenner and the salvation he wrought, but these are words of an old song. Those who have penetrated to the inception of the Jennerian rite; who know the absolute promise by which it prevailed and its absolute failure; who have followed its successive transformations and varieties with their respective injuries and fatalities who are aware of the Babel of confusion and contradiction in which its venal practitioners are involved—these we say recognise how impossible it is for vaccination to be brought under discussion and survive. It is this consciousness which accounts for the reserve of the more prudent order of medical men. They excuse their acquiescence in the delusion (after the manner of ecclesiastics) by the exigencies of professional loyalty; and by the supposition that the harm of the practice is exaggerated, whilst it serves for the consolation of the vulgar. It is for such reasons that we consider the conflict less arduous than it appears. The fortifications are undermined; the bulwarks are rotten through and through. Over all, we place our confidence in the omnipotent favour of the truth. Goliath, mighty and vaunting, is evermore laid low by a smooth stone shapen in the waters of verity.

A WORD FOR THE AUTHOR.

The Story of this Great Delusion, I have tried to tell concisely, keeping close to matter-of-fact, and with some exceptions adhering to English experience. When we venture abroad, we are apt to fall into inaccuracies and draw unwarrantable conclusions. I am told my animus is too pronounced, and that I should have done better had I adopted a more judicial tone. Ah well! we should always have done differently had we done differently. It seems to me a man does best when he is most truly himself; and I question whether I should have improved my case had I tried to conceal my real mind in order to make a more startling show of it at the close.

L'ENVOI.

Lastly, a word to those who are accustomed to dismiss opponents of vaccination as fools and fanatics. It is related of Sydney Smith that calling on Lord Melbourne one morning, he found his lordship in an evil temper and cursing at large. Smith, urgent about his own affairs, at last observed that they should take everything for damned and proceed to business. For like reason I would suggest that the familiar tirade of fool and fanatic be taken as spoken, and that we proceed to discuss vaccination and compulsory vaccination on their merits.

DR. GARTH WILKINSON'S CATECHISM.

Q. When Whooping-Cough is not rife, what is that due to?

A. Nature.

Q. When Scarlatina is not rife, what is that due to?

A. Nature.

Q. When Cholera is not rife, what is that due to?

A. Nature.

Q. When Smallpox is not rife, what is that due to?

A. Vaccination.

Q. When other diseases in the course of time have become mild or died out, what is that due to?

A. Nature.

Q. And when Smallpox has become mild or died out, what is that due to?

A. Vaccination.

Sancho Panza.—I beg of your Worship that you would let your wound be dressed, for a great deal of blood comes from that ear: and I have some lint, and a little white ointment, here in my wallet.

Don Quixote.—All this would have been needless had I recollected to make a vial of the balsam of Fierebras; for with one single drop of that, we might have saved both time and medicine.

Sancho Panza.—What vial, and what balsam is that?

Don Quixote.—It is a balsam, the receipt of which I hold in memory; and having it, there is no fear of death, nor that any wound will be fatal: therefore, when I shall have made it, and given it to thee, all thou wilt have to do, when thou seest me in some battle cleft asunder (as it frequently happens) is, to take up fair and softly that part of my body which shall fall to the ground, and with the greatest nicety, before the blood is congealed, place it upon the other half that shall remain in the saddle, taking especial care to make them tally exactly and justly. Then shalt thou give me two draughts only of the balsam aforesaid, and instantly wilt thou see me become sounder than an apple.

Sancho Panza.—If this be so, I renounce from henceforward the government of the promised island; and only desire, in payment of my many and good services, that your Worship will give me the receipt of this extraordinary liquor; for I daresay it will anywhere fetch more than two reals an ounce; and I want no more to pass this life with credit and comfort. But first, I should be glad to know whether the making of it will cost much?

Don Quixote.—For less than three reals thou mayest make nine pints.

Sancho Panza.—Sinner that I am! Why does your Worship delay making and showing it to me?

Don Quixote.—Peace, friend, for I intend to teach thee greater secrets, and to do thee greater kindnesses: but at present, let us set about the cure; for my ear pains me more than I could wish.

PART I.—VARIOLOUS INOCULATION.

CHAPTER I.

COTTON MATHER AND ZABDIEL BOYLSTON.

To the Turks we owe little, and in the little is included the practice of inducing smallpox artificially. The practice was first brought under English attention by Emanuel Timoni in a letter, dated Constantinople, December, 1713, communicated to the Royal Society by Dr. Woodward, and published in the Society's *Transactions* for 1714.* About the same time, Pylarini, Venetian consul at Smyrna, described the practice in a Latin pamphlet printed at Venice, 1715,† and reproduced in the *Philosophical Transactions* for 1716. Mr. Kennedy, an English surgeon, who had visited Turkey, also reported the practice under the designation of "Engrafting the Smallpox."‡

Timoni was a Greek physician, who had studied at Oxford and Padua, and then established himself in Constantinople. He described "smallpox by incision" as having been practised in Constantinople for forty years, and that it had been found uniformly successful in warding off smallpox as naturally developed. The variolous matter was usually taken from healthy boys suffering from the spontaneous disease, and was applied to persons of all ages and temperaments, causing them no more than temporary and trifling inconvenience. The only preparation requisite for incision was abstinence from flesh and broth for twenty or twenty-five days.

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* *Philosophical Transactions*, No. 338, 1714.

† *Nova et Tuta Variolas Excitandi per Transplantationem Methodus.* Jacob Pylarinum. Venet. 1715. Reprinted in *Philosophical Transactions*, No. 347, 1716.

‡ *An Essay on External Remedies.* By P. Kennedy. London, 1715.

It so happened that when Woodward read Timoni's letter to the Royal Society, he at the same time produced a selection from the correspondence of Cotton Mather of Boston, Massachusetts—a curious jumble of facts and fancies. Mather had been elected a Fellow of the Society, and the selections from his correspondence, and Timoni's letter appeared in the same number of the *Transactions*, No. 338, 1714.

Cotton Mather is one of the marvels of biography—a choice specimen of Puritanism developed without check. He was a man of boundless energy and incessant industry, of intense piety and unlimited self-confidence; and thus, without hesitation, he set himself to extirpate witchcraft, shrinking from no atrocity, until the frightful Salem tragedy of 1692 shocked the colony into mercy and common-sense.

Mather was just the sort of character to be impressed with Timoni's description of the short and easy way with smallpox; and he who had hanged warlocks and witches with sublime assurance, was not likely to have scruples about inoculating the community when inwardly satisfied it was for the public good. The audacity and tyranny of conscientious conceit are proverbial. He had, however, to exercise patience in awaiting an opportunity to test the Turkish remedy, for there had been no smallpox in Boston for nineteen years—a fact worth noting by those who imagine smallpox was an omnipresent ailment until the advent of Edward Jenner. In 1721 a serious outbreak occurred, the deaths rising in October to 100 a week in a population of 15,000. Mather convoked a meeting of physicians, and laid before them the new prescription, but they would not listen to it. Dr. Boylston, however, was persuaded, and inoculated two of his slaves, and then his sons, aged five and six; whereon he was summoned before the justices and severely reprimanded. Undeterred by the State, and supported by the Church, he persevered, and by the end of September had inoculated 80, and by the middle of December, 250.

His custom was to make a couple of incisions in the

arms, into which bits of lint dipped in pox-matter were inserted. At the end of twenty-four hours the lint was withdrawn, and the wounds dressed with warm cabbage leaves. On the seventh day the patient sickened and pustules appeared, sometimes few, sometimes hundreds. Mather and Boylston maintained it was a most wholesome operation, for after it "feeble, crazy, consumptive people, grew hearty, and got rid of their former maladies."* To be poxed was to be rejuvenated.

Cotton Mather's own account of the Boston experiment is worth reading. He wrote—

March 10th, 172½.

The distemper hath lately visited and ransacked the City of Boston; and in little more than half a year, of more than 5000 persons that have undergone it, near 900 have died. But how many lives might have been saved if our unhappy physicians had not poisoned and bewitched our people with a blind rage that it has appeared very like a Satanick Possession against the method of relief and safety in the way of the smallpox inoculated!

I have prevailed with one physician (and for it I have had bloody attempts made upon my life by some of our Energumens) to introduce the practice; and the experiment has been made upon almost 300 Objects in our neighbourhood, young and old (from one year to seventy), weak and strong, male and female, white and black, in midsummer, autumn, and winter, and it succeeds to admiration!

I cannot learn that one has died of it; though the experiment has been made under various and marvellous disadvantages. Five or six have died upon it, or after it, but from other diseases or accidents; chiefly from having taken infection in the common way by inspiration before it could be given in this way by transplantation.

Dr. Leigh, in his *Natural History of Lancashire*, counts it an occurrence worth relating, that there were some catts known to catch the smallpox, and pass regularly through the state of it, and then to die. We have had among us the very same occurrence.

It was generally observed and complained that the pigeon-houses of the City continued unfruitful, and the pigeons did not hatch or lay as they used to do all the while that the smallpox was in its epidemical progress: and it is very strongly affirmed that our dunghill fowl felt much of the like effect upon them.

We have many among us who have been visited with the Plague in other countries many years ago, who have never been arrested with smallpox after it, though they have been exposed as much as any other people to it; whence the belief now begins to prevail

* *Philosophical Transactions*, Vol. xxxii. p. 35.

among us, that they who have had the Plague will never have the smallpox after it.

Considering the developed evidence that awaits us as to the character and results of inoculation, it would be superfluous to discuss this singular report, but we may remark the consummate audacity with which Mather assumes and maintains his position. What a masterly touch of the quack have we in these words—

I cannot learn that one has died of it. Five or six have died upon it, or after it, but from other diseases or accidents; chiefly from having taken infection in the common way by inspiration before it could be given in the way of transplantation.

We can readily understand how the hand that could give so adroit a turn to awkward disasters could in other days frame irresistible indictments for witchcraft.

The precise truth as to the extent of the Boston epidemic is far from easy to ascertain: it was the temptation of the inoculators to magnify the numbers of the afflicted and of their antagonists to minimise. Thus we read—

At a meeting by publick authority in the Town House of Boston, before His Majesty's Justices of the Peace and the Select Men; the practitioners of physic and surgery being called before them, concerning Inoculation, agreed to the following conclusion:—

A Resolve upon a debate held by the physicians of Boston concerning inoculating the Smallpox on the 21st day of July, 1721.

It appears by numerous instances, that it has proved the death of many persons soon after the operation, and brought distempers upon many others which have in the end proved deadly to 'em.

That the natural tendency of infusing such malignant filth in the mass of blood is to corrupt and putrefy it, and if there be not a sufficient discharge of that malignity by the place of incision, or elsewhere, it lays a foundation for many dangerous diseases.

That the operation tends to spread and continue the infection in a place longer than it might otherwise be.

That the continuing the operation among us is likely to prove of most dangerous consequence.

The number of persons, men, women, and children, that have died of smallpox at Boston from the middle of April last (being brought here then by the Saltertuda's Fleet) to the 23rd of this instant July (being the hottest and worst season of the year to have any distemper in) are, *viz.*—2 men, strangers, 3 men, 3 young men, 2 women, 4 children, 1 negro man, and 1 Indian woman, 17 in all;

and of those that have had it, some are well recovered, and others in a hopeful and fair way of recovery.

By the Select Men of the Town of Boston.

Dr. Fleuart of Boston wrote to London that of 70 inoculated, 14 or 15 had died; and that at Roxbury, where there was no smallpox, 5 inoculated had died.*

Conflicting as are the testimonies, we must allow much to the natural aversion from an operation, not only novel, but disgusting; but taking the best that could be claimed for the new practice by an enthusiastic advocate, the benefit was trifling when seriously scrutinised. Dr. Boylston visited London after the Boston epidemic, and finding inoculation in high vogue he published an *Account of the Smallpox inoculated in New England.*† George I. and the Prince and Princess of Wales had taken Inoculation under their august patronage, and Boylston with loyal fervour burst forth—

Shall not physicians and surgeons recommend and bring it into greater esteem and practice, and save (under God) thousands and tens of thousands by it; and make further improvements in it; and set more vigorously about it when they consider their great Pattern and Example for it, namely, the greatest and wisest of Kings, their royal highnesses the Prince and Princess at the head of it; and that it has been used upon their Royal Issue with great success?

Boylston in his *Account* recites his cases with, we think, general veracity. He performed 244 inoculations, and says, "there were in the towns near Boston about 36 persons more inoculated, which all did well; namely, by Dr. Roby about 11, and by Dr. Thomson about 25, which, together with my 244, make up the number of 280; out of which number died only 6 persons, notwithstanding all the difficulties the practice laboured under."

Beyond measure extraordinary was the bland assurance wherewith Boylston, in common with Mather and

* *Letter to Dr. Jurin by Isaac Massey.* London, 1723.

† *An Historical Account of the Smallpox inoculated in New England upon all sorts of persons, Whites, Blacks, and of all Ages and Constitutions.* By Zabdiel Boylston. London, 1726.

others, assumed and argued that the 280 inoculated had been thereby delivered from the plague of smallpox and death. Accepting the improbable supposition that the 280 were a fair average of 15,000 Bostonians, of whom one-third took smallpox, we have to abstract two-thirds of the 280, or 186 as superfluously inoculated, leaving 93 saved from smallpox. If we then inquire how many of these were saved from death, and resort to Boylston's statistics, who says,—

In 1721 and beginning of 1722 there were in Boston 5759 persons who had smallpox in the natural way, out of which number died 844; so that the proportion that die of natural smallpox appears to be one in six, or between that of six and seven—*

We find the number no more than 15, from which, if we deduct the 6 who died under his hand, his trophies are reduced to 9, to save whom he put 280 into serious sickness and jeopardy—so serious indeed in some instances (as appears from his own notes) that there was slight reason to prefer inoculated to spontaneous smallpox.

Viewed thus in his own light—a light most favourable, how vain, not to say impudent, was such boasting as this—

Now, if there be any one that can find a faithful account or history of any other method or practice that has carried such a number of all ages, sexes, constitutions, and colours, and in the worst seasons of the year, through the smallpox; or indeed through any other acute distemper with better success, then I will alter my opinion of this; and until then, I shall value and esteem this method of inoculating the smallpox as the most beneficial and successful that ever was discovered to, and practised by mankind in this world.†

And, gaining courage through his own noise, he went yet farther, and proclaimed that smallpox was tamed and subdued—

It is, and shall be acknowledged, to the praise and glory of God, that whereas a most wild, cruel, fierce and violent distemper, and which has destroyed millions of lives, is now (by that happy discovery made of its transplantation) become tractable, safe and gentle.‡

* *An Historical Account*, p. 39. † *Ibid.* p. 38. ‡ *Ibid.* p. 46.

In the knowledge of the emptiness of this bounce, it may seem malicious to withdraw it from forgetfulness; but it serves to point the truth that human nature in 1726 was much the same as human nature at this day, and that the same arts of audacious assertion and rowdy rhetoric were in practice then as now. Indeed, whoever is sufficiently wicked to presume on the natural trustfulness of mankind, and will lie loud enough and long enough, may attain an appalling success—as our story, alas! will prove.

One thing goes to Boylston's credit: he did not propose to make poxing universal—to poison and sicken everybody, and inflict certain injury to avert future and uncertain danger from a few. He proposed to reserve inoculation for emergencies—

> When the smallpox left Boston, inoculation ceased; and when it shall please Providence to send and spread that distemper among us again, may inoculation revive, be better received, and continued a blessing in preserving many from misery, corruption and death.

The narratives of Mather and Boylston are of special importance because we have in them the true lineage of inoculation as introduced from the eastern to the western world. Boylston tells us that when smallpox appeared in Boston—

> Dr. Mather, in compassion to the lives of the people, transcribed from the *Philosophical Transactions* of the Royal Society the accounts sent them by Dr. Timonius and Pylarinus of inoculating the smallpox in the Levant, and sent them to the practitioners of the town for their consideration thereon.*

For some inscrutable reason the true position of Cotton Mather in the history of inoculation is continually overlooked or mis-stated. For instance, in Mather's biography in the excellent *English Cyclopœdia*, it is said that he derived his information and impulse from the letters of Lady Mary Wortley Montagu; a statement repeated in the memoirs of that lady, which is entirely fabulous.

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* *An Historical Account*, p. 1.

CHAPTER II.

LADY MARY WORTLEY MONTAGU.

As for History," said the Duke of Marlborough, "I know that it is false;" and whoever has occasion to enter minutely into any historical question will be apt to concur with the Duke. Happening to refer to Walter Bagehot's essay on Lady Mary Wortley Montagu, I found this passage—

> She brought from Turkey the notion of inoculation. Like most improvers, she was roughly spoken to. Medical men were angry because the practice was not in their books, and conservative men were cross at the agony of a new idea. Religious people considered it wicked to have a disease which Providence did not think fit to send you; and simple people "did not like to make themselves ill of their own accord." She triumphed, however, over all obstacles; inoculation, being really found to lengthen life and save complexions, before long became general.*

Now Bagehot loved accuracy and abhorred credulity; and yet in these lines, delivered with as much confidence as a column of the multiplication table, there are exhibited about as much inaccuracy and credulity as could be packed into the space. Let us see what Lady Mary really did in the matter of inoculation.

Mr. Wortley Montagu was appointed ambassador to the Porte, and set out for Constantinople in the autumn of 1716 accompanied by his wife, then in her twenty-seventh year. The Ottoman Empire was in those days powerful and proud, disdaining to send representatives to Christian Courts, and receiving ambassadors as commercial agents, or as bearers of homage from their respective sovereigns. The English ambassador reached his destination early in 1717, and ere a month had passed, and ere Lady Mary had time to look around and appreciate the strange world into which she had entered, with sprightly audacity she wrote as follows to her friend Miss Sarah Chiswell—

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* *Literary Studies*, Vol. i. p. 248.

I am going to tell you a thing that I am sure will make you wish yourself here. The smallpox, so fatal, and so general amongst us, is here entirely harmless by the invention of *ingrafting*, which is the term they give it. There is a set of old women who make it their business to perform the operation every autumn, in the month of September, when the great heat is abated. People send to one another to know if any of their family has a mind to have the smallpox: they make parties for this purpose, and when they are met (commonly fifteen or sixteen together) the old woman comes with a nut-shell full of the matter of the best sort of smallpox, and asks what veins you please to have opened. She immediately rips open that you offer to her with a large needle (which gives you no more pain than a common scratch), and puts into the vein as much venom as can lie upon the head of her needle, and after binds up the little wound with a hollow bit of shell; and in this manner opens four or five veins. The Grecians have commonly the superstition of opening one in the middle of the forehead, in each arm, and on the breast, to mark the sign of the cross; but this has a very ill effect, all these wounds leaving little scars, and is not done by those that are not superstitious, who choose to have them in the legs, or that part of the arm that is concealed. The children or young patients play together all the rest of the day, and are in perfect health to the eighth. Then the fever begins to seize them, and they keep their beds two days, very seldom three. They have very rarely above twenty or thirty [pustules] in their faces, which never mark; and in eight days' time they are as well as before their illness. Where they are wounded, there remain running sores during the distemper, which I don't doubt is a great relief to it. Every year thousands undergo this operation; and the French ambassador says pleasantly that they take the smallpox here by way of diversion, as they take the waters in other countries. There is no example of any one that has died in it; and you may believe I am very well satisfied of the safety of the experiment, since I intend to try it on my dear little son.

I am patriot enough to take pains to bring this useful invention into fashion in England; and I should not fail to write to some of our doctors very particularly about it, if I knew any one of them that I thought had virtue enough to destroy such a considerable branch of their revenue for the good of mankind. But that distemper is too beneficial to them not to expose to all their resentment the hardy wight that should undertake to put an end to it. Perhaps, if I live to return, I may, however, have courage to war with them. Upon this occasion admire the heroism in the heart of your friend.

In this letter there was material for a smallpox idyl—nothing easier, nothing surer, "smallpox made entirely harmless." But idyls are deceptive; their paradisiacal

effects are obtained by the sedulous exclusion of whatever is otherwise. About the time that Lady Mary was romancing so triumphantly to Miss Sarah Chiswell she despatched this note to her husband—

Sunday, 23rd March, 1717-18.

The boy* was engrafted last Tuesday, and is at this time singing and playing, and very impatient for his supper. I pray God my next may give as good an account of him. . . . I cannot engraft the girl; her nurse has not had the smallpox.

Why should the engrafting of the infant have been hindered because the nurse had not had smallpox? The answer to the question reveals a peril concealed from Miss Sarah Chiswell. Because the engrafted child would probably have communicated unmitigated smallpox to the nurse. Why not then engraft nurse and child? Because they would have sickened together, and mother Mary did not care to incur the risk. There was no danger, she said; none whatever, only a pleasant diversion; nevertheless she preferred discretion to her own voluble assurance.

In History we have always to suspect the picturesque, for mankind have a fatal preference for handsome error over uncomely fact; and Lady Mary Wortley Montagu as mother of English inoculation, and derivatively of vaccination, is ever so much more graceful than dull Timoni and Pylarini in the *Philosophical Transactions*, or Cotton Mather in New England. Few condescend to inquire whether Lady Mary, as primary inoculator, was acting independently, or whether she had advisers and prompters. "All of her self and by her self" is the heroic representation—"a woman's wit against the world;" and judgment surrenders to fancy, as is the way with myths ancient and modern.

But it so happens that what in itself ought to be incredible—that a young Englishwoman should suddenly adopt the strange practice of a strange people—is demonstrably incredible. Lady Mary did not act alone. She had for counsellor and director, Charles Maitland,

* Born in Yorkshire, 1713.

the physician to the embassy, who, familiar with the fame of inoculation, was glad to observe its practice experimentally. Maitland writes—

> In the year 1717, when I had the honour to attend the English Ambassador and his family at Constantinople, I had a fair opportunity fully to inform myself *of what I had long before heard*, namely, the famous practice of transplanting, or raising the small-pox by inoculation.*

Here we may note, too, that Maitland was aware that inoculation did not originate in Turkey. He says—

> Whilst universally practised all over Turkey for three-score years past, it has been known in other parts of the East, a hundred, or, for aught we know, some hundreds of years before.†

It was Maitland who managed the inoculation of young Montagu, and he thus described the operation—

> About this time, the Ambassador's ingenious lady resolved to submit her only son to it, a very hopeful boy of about six years of age. She first of all ordered me to find out a fit subject to take the matter from, and then sent for an old Greek woman who had practised this way a great many years. After a good deal of trouble and pains, I found a proper subject, and then the good woman went to work; but so awkwardly by the shaking of her hand, and put the child to so much torture with her blunt and rusty needle, that I pitied his cries, who had ever been of such spirit and courage that hardly anything of pain could make him cry before; and, therefore, inoculated the other arm with my own instrument, and with so little pain to him that he did not in the least complain of it. The operation took in both arms, and succeeded perfectly well. . . He had about an hundred pox all upon his body. This operation was performed at Pera in the month of March, 1717.

That is to say, almost simultaneously with the Ambassador's arrival in Turkey.

The embassy returned to England in 1718, after a residence of little over a year in Constantinople. The dates are worth observation; for whilst it appears that the doctor and the lady were in common resolved to recommend the practice of inoculation to their countrymen, the dates prove with what inexperience and levity they

* *Account of Inoculating for Smallpox.* London, 1722.
† *A Short Account of Inoculation.* London, 1723.

assumed the grave responsibility. If quackery be assertion in absence of knowledge or of evidence, then we may accurately stigmatise Maitland and Montagu a couple of quacks. But so far as concerns Maitland we may go farther, for he expressly tells us—

I was assured and saw with my eyes that the smallpox is rather more malignant and epidemic in the Turkish dominions than with us; insomuch that, as some have affirmed, one-half, or at least one-third part of the diseased, at certain times, do die of it; and they that escape are terribly disfigured by it.*

Yet this same Maitland, who thus testified of the impotence of inoculation to mitigate and restrain smallpox in Turkey, came to England ready to assert its power to mitigate and restrain! It is difficult to find words of due severity for such impudent inconsistency. We shall see, however, in the course of this wonderful story, how every rule of evidence may be defied in the matter of smallpox, and how it is possible to shut one's eyes and prophesy in the name of science, and have noise and hardihood accepted for veracity.

CHAPTER III.

MAITLAND'S EXPERIMENTS.

Lady Mary Wortley Montagu returned to England in 1718, but not until 1721 did she fulfil her intention of making war on the doctors, and incurring their resentment for the good of mankind. In the spring of 1721 she commenced action in earnest by the inoculation of her daughter—the infant that it was considered unsafe to "engraft" when at Pera in 1718. In Maitland's words—

The noble Lady sent for me last April, and when I came, she told me she was now resolved to have her daughter inoculated, and desired me forthwith to find out matter for the purpose. I pleaded for a delay of a week or two, the weather being then cold and wet. I also prayed, that any two physicians whom she thought fit, might

* *Account of Inoculating for Smallpox*, p. 4.

be called, not only to consult the health and safety of the child, but likewise to be eye witnesses of the practice, and contribute to the credit and reputation of it. This was at first denied me, it might be out of a design to keep it secret, or lest it should come to nothing.

In the meantime having found proper matter, I engrafted the child in both arms, after the usual manner. She continued easy and well till the tenth night, when she was observed to be a little hot and feverish. An ancient apothecary in the neighbourhood being then called, prudently advised not to give the child medicine, assuring the parents there was no danger, and that the heat would quickly abate, which accordingly it did, and the smallpox began next morning to appear. Three learned physicians of the college were admitted, one after another, to visit the young lady; they are all gentlemen of honour, and will on all occasions declare, as they have done hitherto, that they saw Miss Wortley playing about the room, cheerful and well, with the smallpox raised upon her; and that in a few days after she perfectly recovered of them. Several ladies, and other persons of distinction, also visited this young patient, and can attest the truth of this fact.

One of the learned physicians who had visited Miss Wortley, having some years since fully informed himself of this method of practice, and being thoroughly satisfied of the safety and reasonableness of it, at length resolved to try it in his own family; he had formerly lost some children in a very malignant kind of the smallpox, and therefore advised me to lose no time to engraft the only son he had left. The boy (who was not quite six years of age) being of a pretty warm and sanguine complexion, the Doctor ordered about five ounces of blood to be taken from him; and then, in ten days after, having found matter which he liked, I inoculated him in both arms. This was performed the 11th of May, 1721.

The learned physician here referred to was Dr. Keith, and the facility wherewith he adopted the novel practice supplies an instructive commentary on Lady Mary's anticipation of the resentment of "the profession"—her first imitator coming from the ranks of the dreaded self-seeking obstructives. Furthermore, we have to observe how different is Maitland's account from the heroic myth current of "the one woman confronting the prejudice and ill-will of the world." Even Lady Louisa Stuart, who made it her business to correct many misconceptions as to her grandmother's career, writes—

Only the higher motive of hoping to save numberless lives could have given Lady Mary courage to resolve upon bringing home the

discovery. For what an arduous, what a fearful, and, we may add, what a thankless enterprise it was, nobody is now in the least aware. Those who have heard her applauded for it ever since they were born, and have also seen how joyfully vaccination was welcomed in their own days, may naturally conclude that when once the experiment had been made, and had been proved successful, she could have nothing to do but to sit down triumphant, and receive the thanks and blessings of her countrymen. But it was far otherwise. . . Lady Mary protested that in four or five years immediately succeeding her arrival at home, she seldom passed a day without repenting of her patriotic undertaking; and she vowed that she never would have attempted it, if she had foreseen the vexation, the persecution, and even the obloquy it brought upon her. The clamours raised against the practice, and of course against her, were beyond belief. *The faculty rose in arms to a man*, foretelling failure and the most disastrous consequences; the clergy descanted from their pulpits on the impiety of thus seeking to take events out of the hand of Providence; the common people were taught to look at her as an unnatural mother, who had risked the lives of her own children. . . We now read in grave medical biography that the discovery was instantly hailed, and the method adopted, by the principal members of the profession. . . But what said Lady Mary of the actual fact and actual time? Why, that *the four great physicians deputed by Government to watch the progress of her daughter's inoculation*, betrayed not only such incredulity as to its success, but such an unwillingness to have it succeed, such an evident spirit of rancour and malignity, that she never cared to leave the child alone with them one second, lest it should in some secret way suffer from their interference.*

Thus is History written! An apothecary and three doctors, selected by the Wortleys at discretion, and admitted singly to view a private experiment, are converted into "four great physicians deputed by Government," rancorous and dangerous! Thus are myths generated!

Lady Mary was a woman of mark in society, fashionable and literary, and her exploit was naturally the talk of the town. Among her friends was Caroline, Princess of Wales, a lady of more than ordinary strength of mind and intelligence, with a taste for theology and philosophy, the patron of Butler, and his sympathetic student. It has been said, "There never was a clever woman that

* *Letters and Works of Lady Mary Wortley Montagu.* Vol. i. pp. 88-90. Ed. 1861.

was not a quack;" and Princess Caroline was an illustration of its truth. The new remedy for smallpox caught her fancy, and she determined to put it to the test. She begged of George I. that six felons should be pardoned on condition of their submission to inoculation, and the King was pleased to comply with the extraordinary request. Maitland was then called upon to exhibit his skill, but he hesitated to act as hangman's substitute; whereon Sir Hans Sloane, the court physician, was appealed to. Sir Hans held counsel with Dr. Terry of Enfield, who had practised physic in Constantinople, and knew something of inoculation; and fortified with Terry's assurance, he was enabled to overcome Maitland's scruples, real or affected. Accordingly, on the 9th of August, 1721, writes Maitland—

I performed the operation of inoculating the smallpox on six condemned criminals at Newgate in presence of several eminent physicians, surgeons, and others. The names of the criminals were—

1.	Mary North, . . .	Aged 36 years.
2.	Anne Tompion, . .	,, 25 ,,
3.	Elizabeth Harrison, .	,, 19 ,,
4.	John Cawthery, . .	,, 25 ,,
5.	John Alcock, . . .	,, 20 ,,
6.	Richard Evans, . .	,, 19 ,,

On Wednesday morning, 9th August, he made incisions in both arms and the right legs of the six. Thursday passed and Friday passed without any indications of constitutional disturbance, and, despairing of success, he obtained fresh pox on Saturday from Christ's Hospital, and repeated the inoculation in new incisions in the arms of five of them. He had no matter left for Evans, who, it appeared, had had smallpox in September, 1720, and who therefore escaped hanging unwarrantably. The disease now "took," and progressed satisfactorily. Says Maitland—

One day Mr. Cook, an eminent Turkey merchant, having seen the persons engrafted in Newgate, and having fully considered their incisions and eruptions, he openly declared they were the very same as he had observed in Turkey, having seen a great many

instances; and that we might be assured they would never again be infected with smallpox.

Dr. Mead suggested another experiment—that cotton dipped in pox should be inserted in the nostrils; and a young woman sentenced to death received her life on condition of submitting to the operation. Here we have Mead's own account of the transaction—

A learned author has given an account of the practice of sowing smallpox, as they call it, known to the Chinese above three hundred years, which is this. They take the skins of some of the dried pustules, which are fallen from the body, and put them into a porcelain bottle, stopping the mouth of it very close with wax. When they have a mind to infect any one, they make up three or four of these skins, putting between them with one grain of musk into a tent with cotton, which they put up the nostrils.

I myself have had an opportunity of making an experiment to this purpose. For, when in the year 1721, by order of his Sacred Majesty, both for the sake of his own family, and of his subjects, a trial was to be made upon seven condemned malefactors, whether or not the smallpox could safely be communicated by inoculation; I easily obtained leave to make the Chinese experiment in one of them. There was among those who were chosen out to undergo the operation, a young girl of eighteen years of age. I put into her nostrils a tent, wetted with matter taken out of ripe pustules. The event answered: for she, in like manner with the others, who were infected by incisions made in the skin, fell sick, and recovered; but suffered much more than they did, being, immediately after the poison was received into the nose, miserably tormented with sharp pains in her head, and a fever, which never left her till the eruption of the pustules.*

Finally, says Maitland—

On the 6th of September they were all dismissed to their several counties and habitations. The thing has been successful on all the five, far beyond my expectation, considering their age, habit of body, and circumstances; and it has perfectly answered Dr. Timoni's account of the practice, and also the experience of all who have seen it in Turkey.†

So Maitland asserted, but others were of a different opinion. Dr. Wagstaffe, who visited the patients in

* *On Smallpox and Measles.* By Dr. Mead. London, 1747.

† *Mr. Maitland's Account of Inoculating the Smallpox.* 2nd. ed. London, 1723.

Newgate regularly, maintained in a letter addressed to Dr. Freind—

Upon the whole, Sir, in the cases mentioned, there was nothing like the smallpox, either in symptoms, appearances, advance of the pustules, or the course of the distemper. And it would puzzle any one to conceive how it is possible that smallpox can ever be prevented by inoculation. With the exception of one of the men, the girl who had cotton dipped in matter thrust up her nostrils, had as fair a smallpox as any in the place. *

Sir Hans Sloane and Dr. Steigertahl, physician to the King, to test the matter farther, "joined purses," and had one of the women inoculated in Newgate sent to Hertford, where smallpox of a severe form was prevalent, to lie in bed with smallpox patients. This she did with impunity; but it was reasonably objected that many who were not inoculated did so likewise and escaped without harm.

The Newgate experiment, of course, caused great excitement, and induced many repetitions in town and country. The Princess of Wales was especially alive to the importance of "the great discovery;" and for her additional satisfaction, six charity children, belonging to the parish of St. James, were inoculated; and all but one "took" and did well; the exception being due to the craft of the child, who, for the sake of the reward, concealed the fact of having had smallpox.

Upon these trials, and several others in private families [wrote Sir Hans Sloane], the Princess of Wales sent for me to ask my opinion of the inoculation of the Princesses. I told Her Royal Highness, that by what appeared in the several essays, it seemed to be a method to secure people from the great dangers attending smallpox in the natural way. That preparations by diet and necessary precautions being taken, made the practice very desirable; but that not being certain of the consequences which might happen, I would not persuade nor advise the making trials upon patients of such importance to the public. The Princess then asked me if I would dissuade her from it: to which I made answer that I would not, in a matter so likely to be of such advantage. Her reply was, that she was then resolved to have it done, and

* *A Letter to Dr. Freind showing the Danger and Uncertainty of Inoculating the Smallpox.* By W. Wagstaffe, M.D. London, 1722.

ordered me to go to the King, who commanded me to wait upon him on the occasion. I told his Majesty my opinion, that it was impossible to be certain, but that raising such a commotion in the blood there might happen dangerous accidents not foreseen: but he replied that such might and had happened to persons who had lost their lives by bleeding in a pleurisy, and taking physic in any distemper, let never so much care be taken. I told his Majesty that I thought this to be the same case, and the matter was concluded upon, and succeeded as usual, without any danger during the operation, or the least ill symptom or disorder since.*

The Princess Amelia, aged eleven, and Caroline, aged nine, were therefore inoculated on the 19th of April, 1722.

Let us return to Maitland, whose triumph for the moment appeared complete, and with it his assurance. To his detractors he professed boldly—

I could bring a great many cases of persons inoculated in Turkey to prove *the constant and certain success of the practice;* in all which I have never seen any miscarriage, except in one, which was wholly due to the rashness and inadvertence of a surgeon at Constantinople.

Is it not a matter of the greatest importance for us to know how to prevent the mighty contagion of the smallpox, and how to preserve our children from the violent attacks and fatal effects of it?

To divine Maitland's character—to determine how far he was deceiver or deceived is not easy. He obviously made professions in vast excess of his knowledge. One of his contemporaries writes—

I remember Mr. Maitland at Child's Coffee House, when the experiment was just begun at Newgate, was as confident and positive of the success and security proposed by inoculation as if he had had twenty years experience without any miscarriage, which made those who heard him justly suspect he was more concerned for the employ than for the success of it. †

He had not the proper craft of the conscious rogue, for alongside his assertions of absolute competence and safety, he set forth such confessions of ignorance and disaster, that one is impelled to pronounce him a pur-

* *An Account of Inoculation by Sir Hans Sloane, Bart., given to Mr. Ranby to be published*, 1736. *Philosophical Transactions*, Vol. xlix. p. 516.

† Isaac Massey to Sir Hans Sloane, 1722.

blind enthusiast. For example, take this case, which he published without apparently any sense of its scope—

2nd October, 1721.—After due preparation of the body, I engrafted Mary Batt, an infant of two years and a half old, daughter of Thomas Batt, a Quaker, living at Temple, within three miles of Hertford. The red spots and flushings appeared on her face and neck the fourth day; and she kept playing about well till the seventh or eighth, when she became a little heavy and thirsty, with a fuller and quicker pulse; then the pustules came out fresh and full, and the incisions discharged a thick and well digested matter. She had not above twenty in all upon her; they continued about three or four days, then dried away and fell off, and the child recovered perfectly.

Thus far all was well; *but what happened afterwards was, I must own, not a little surprising to me, not having seen or observed anything like it before.* The case was in short this. Six of Mr. Batt's domestic servants, namely, four men and two maids, who all in their turns were wont to hug and caress this child whilst under the operation, and the pustules were out upon her, never suspected them to be catching, *nor indeed did I*, were all seized with the right natural smallpox, of several and very different kinds; for some had the round distinct sort, some the small continued, and others the confluent; all of 'em had a great many, but especially the last, with the usual bad symptoms, *and very narrowly escaped.* But they all (God be thanked) did well *(except one maid,* that would not be governed under the distemper, *who died of it,)* and now enjoy a perfect state of health.*

Thus at the outset, smallpox and death were the products of inoculation—the peril to be averted was incurred and multiplied. Yet the man who thus records his own infamous ignorance, had the impudence in the same pages to assert—

The practice prudently managed, is always safe and useful, and the issue ever certain and salutary.†

Words are wasted on such reckless folly: we perceive how true is Carlyle's observation, "Stupidity intellectual always means stupidity moral, as you will, with surprise or not, discover if you look."

Before leaving Maitland, we may take another leaf from his experience. He writes—

12th October, 1721.—I inoculated Joseph and Benjamin, sons of

* Maitland's *Account*, p. 27. † *Ibid.* p. 33.

William Heath, of Hertford; the first of about seven, and the second three years of age; both with the same matter and at the same time: the last had a gentle and favourable kind; but the first, namely, Joseph, being a fat, foul, gluttonous boy, who would not be confined to the rules and directions I had strictly charged his mother withal, as to diet and keeping warm, was taken very ill before the eruption, and after it had a great load of the continued small kind, but at last recovered and did well.

What a mighty difference is here to be observed between those two boys! The reason of it seems to be plainly this: the younger, who had the favourable kind, was of a clean habit, moderate appetite, and easily governed during the whole process. The elder was not only of a gross foul constitution, but likewise had a voracious appetite, always eating and filling his belly with the coarsest food —as cheese, fat country pudding, cold boiled beef, and the like, which I saw myself as I came in by chance the third day after the operation; nor was there any care taken to restrain or keep him within doors in cold, windy, frosty weather; he once wet his feet in water—insomuch that had he taken the smallpox by infection, the world could not have saved his life. Hence it appears how necessary it is to cleanse thoroughly foul habits before the operation, and, withal, to keep patients to a very strict regimen under it.*

Verily, as Cobbett said, quackery is never without a shuffle. As we shall see, inoculation came to require a preparatory course of very strict regimen—so strict as to be impracticable for the rank and file of the world; but the practice was at first commended without any such conditions. What said Maitland's patron, Lady Mary, in her famous letter from Adrianople?—

The smallpox, so fatal and so general amongst us, is here entirely harmless by the invention of *ingrafting*. . . . Every year thousands undergo its operation; and the French ambassador says pleasantly that they take the smallpox here by way of diversion, as they take waters in other countries. There is no example of anyone that has died in it.

It was under cover of such seductive assurances that inoculation was introduced to England, and established in perversity and quackery.

* Maitland's *Account*, p. 27.

CHAPTER IV.

THE FIRST OPPONENTS OF INOCULATION.

As we have seen, it is part of the legend that the introduction of inoculation was fanatically resisted by physicians, clergy, and mob; but the resistance was neither fanatical nor extensive, and is chiefly the invention of the romancing biographers who represent Lady Mary Wortley Montagu as a heroine and martyr of science. To do that shrewd and brilliant woman justice, she made no pretence to the character imputed to her, and in her copious correspondence, there is not a hint of annoyance on the score of her patronage of the Turkish modification of smallpox. On the contrary, it would appear that inoculation brought her a large share of that veiled notoriety in which she had sincere pleasure. Writing to the Countess of Mar in 1723, she says—

> Lady Byng has inoculated both her children, and since that experiment has not had any ill effect, the whole town are doing the same thing; and I am so much pulled about, and solicited to visit people, that I am forced to run into the country to hide myself.*

Lady Mary understood her countrymen thoroughly, and, thirty years after her exploits in inoculation, she wrote to Mr. Wortley Montagu as follows—

> Brescia, 24th April, 1748.
>
> I find Tar Water succeeded to Ward's Drop. 'Tis possible, by this time, that some other quackery has taken place of that. The English are easier than any other nation infatuated by the prospect of universal medicines, nor is there any country in the world where the doctors raise such immense fortunes. I attribute it to the fund of credulity which is in all mankind. We have no longer faith in miracles and relics, and therefore with the same fury run after recipes and physicians. The same money which three hundred years ago was given for the health of the soul is now given for the health of the body, and by the same sort of people—women and half-witted men. †

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* *Letters and Works of Lady M. W. Montagu*, Vol. i. p. 468, edition 1861.

† *Ibid.* Vol. ii. p. 161.

Those who fancy there could be any wide or effective resistance to inoculation in 1721 misapprehend the conditions of the time. There was no scientific knowledge of the laws of health; diseases were generally regarded as mysterious dispensations of Providence over which the sufferers had little control; and a great part of medicine was a combination of absurdity with nastiness. It would not be difficult to compile a series of recipes from the pharmacopœia of that day which would alternately excite amusement, surprise, and disgust, and to describe medical practice from which it is marvellous that ever patient escaped alive; but so much must pass without saying. Suffice it to assert, that to inoculation there was little material for opposition, rational or irrational; and that what we might think the natural horror of transfusing the filth of smallpox into the blood of health, was neutralised by the currency of a multitude of popular remedies which seemed to owe their fascination to their outrageous and loathsome characteristics.

Moreover, as the dates prove, the interval was brief between the introduction of inoculation and its authoritative acceptance. The girl Montagu was privately inoculated in April, 1721, Dr. Keith's boy on the 11th of May, the Newgate experiment took place on the 9th of August, a variety of experiments followed, and lastly the Princesses Amelia and Caroline were inoculated on the 19th of April, 1722—sharp work for one year. There was not time for opposition. The citadel of social approval was carried with a rush. As a contemporary observed—

> I could not but take notice with what united force and zeal the practice was pushed on upon the life and reputation it received from its admission to the Royal Palace; all pens and weekly papers at work to recommend and publish it; and it was rightly judged, then or never was the time; and had it not been for some unlucky miscarriages, the Inoculators would have had the best chance for full practice and full pockets that ever fell into the hands of so small a set of men.*

* *A Short and Plain Account of Inoculation.* By Isaac Massey. London, 1724.

The royal approval was assiduously worked, and there were not wanting hints that to question the goodness of inoculation was equivalent to disloyalty; and thus we find the Rev. E. Massey protesting in a letter to Mr. Maitland—

I wish the Doctor more candour toward those who differ from him than to insinuate that they are guilty of high treason, and a better argument for this practice than the cry, Inoculation! and King George for ever!*

Bad reasons are often advanced against bad policy, and whilst it is probable that some silly things were uttered against inoculation, yet I think every candid mind would be impressed with the moderation of Maitland's chief adversaries. There was Isaac Massey, for instance, apothecary to Christ's Hospital, who published several pamphlets in opposition, wherein candour and good sense are throughout conspicuous. He defined—

Inoculation as an art of giving the smallpox to persons in health, who might otherwise have lived many years, and perhaps to a very old age without it, whereby some unhappily come to an untimely death. †

He objected to the exaggerated dangers of smallpox wherewith the Inoculators operated on the public fears, and appealed to his own experience in Christ's Hospital—

Where there are generally near 600 children, the nurseries at Ware and Hertford constantly filling the places of those who go off. It hath sometimes happened that great numbers have been down of the smallpox, and 'tis but seldom that the House is free, or not long so: yet I daresay, and Sir Hans Sloane, I presume, will say so too, that in twenty years there have not died above five or six at most of the distemper, and in the last eight years there died but one. ‡

So lightly did he regard the peril of smallpox to the young that he delivered this challenge—

Suppose that twenty-five Bluecoat Hospital boys at a medium, one year with another, taken ill of the smallpox.

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* *Letter to Mr. Maitland.* By Edmund Massey. London, 1722.
† *A Short and Plain Account of Inoculation*, p. 1. ‡ *Ibid.* p. 21.

Suppose we likewise, that the Inoculators take out of the several wards, yearly, as they find them, twenty-five boys, which are inoculated.

Quere, What the difference of success? I solemnly protest that if this could be put in practice, I would lay two to one against the inoculated.

For, as I have said before, we have lost but one smallpox patient these nine years [writing in 1723] although 1800 children have been in the House during that time, and I declare to have met with no unequal success in other families amongst children about the same ages (that is between 8 and 15) where I have been concerned, and I doubt not but many of the Learned Faculty, as well as some others of my profession, can say as much from their own experience and observation. *

To appreciate Massey's contention on this point, we have to remember that smallpox is the designation of a disease of many degrees of intensity; a consideration which Dr. Wagstaffe, another opponent of inoculation, thus enforced—

There is scarcely, I believe, so great a difference between any two distempers in the world, as between the best and worse sort of smallpox, in respect to the dangers which attend them. . . . So true is that common observation, that there is one sort in which a nurse cannot kill, and another which even a physician can never cure. †

Of course the Bills of Mortality were appealed to in evidence of the extent and fatality of smallpox; and as it is matter of common belief that prior to inoculation and Jenner (there is always a haze about the date) people were mown down with smallpox, it may be worth while reviving the table of relative mortality in London during the first twenty-two years of the 18th century.

	Burials from all Diseases.	From Smallpox.
1701	20,471	1095
1702	19,481	311
1703	20,720	898
1704	22,684	1501
1705	22,097	1095
1706	19,847	721

* *Letter to Dr. Jurin.* By Isaac Massey. London, 1723.

† *Letter to Dr. Freind.* By W. Wagstaffe, M.D., F.R.S., one of the physicians of St. Bartholomew's Hospital. London, 1722.

	Burials from all Diseases.	From Smallpox.
1707	21,600	1078
1708	21,291	1687
1709	21,800	1024
1710	24,620	3138
1711	19,833	915
1712	21,198	1943
1713	21,057	1614
1714	26,569	2810
1715	22,232	1057
1716	24,436	2427
1717	23,446	2211
1718	26,523	1884
1719	28,347	3229
1720	25,454	1440
1721	26,142	2375
1722	25,750	2167
	505,598	36,620

By these tables [wrote Dr. Jurin] it appears that upwards of 7 per cent., or somewhat more than a fourteenth part of mankind, die of the smallpox; and consequently the hazard of dying of that distemper, to every individual born into the world, is at least that of 1 in 14.*

This large induction from London to universal mankind is noteworthy, because, as we shall see, it came to be often made, and involved a serious fallacy; for unless universal mankind dwelt in conditions similar to Londoners, it was idle to infer a common rate of disease and mortality. The population of London in 1701 was estimated at about 500,000 (there was no exact census), rising to about 600,000 in 1720. It was closely packed and lodged over cess-pools; the water supply was insufficient, and there was no effective drainage. The vast multitude was disposed, as if by design, for the generation and propagation of zymotic disease, and specially smallpox. Little attention was paid to personal cleanliness, and still less to ventilation, to light, to exercise. The condition of a large urban community a century ago is almost inconceivable at the present day.

* *A Letter to Caleb Cotsworth, M.D.* By James Jurin, M.D. London, 1723.

Londoners were then only slowly and blindly rising out of those modes of existence which made the Plague of 1665, and other plagues, possible. Hence we need not be astonished that smallpox was a common and persistent affliction; but it was less prevalent and less deadly than it is the custom to assert; and had the disease not been attended with injury to feminine beauty, there might have been no more fuss made about it than about any other form of eruptive fever.

It has also to be observed, that smallpox as a cause of death was probably much exaggerated in the Bills of Mortality; for as Isaac Massey pointed out—

> These Bills are founded on the ignorance or skill of old women, who are the searchers in every parish, and their reports (very often what they are bid to say) must necessarily be very erroneous. Many distempers which prove mortal, are mistaken for the smallpox, namely, scarlet and malignant fevers with eruptions, swinepox, measles, St. Anthony's fire, and such like appearances, which if they destroy in three or four days (as frequently happeneth) the distemper can only be guessed at, yet is generally put down by the searchers as smallpox, especially if they are told the deceased never had them.*

Massey, in the same spirit of good sense, objected to generalisations about smallpox from the Bills of Mortality, as if all who died were slain by the disease and by nothing else.

> There ought to be no comparison [he said] between sick people, well regimented with diet and medicine, and those who have no assistance, or scarcely the necessaries of life.
>
> The miserable poor and parish children make up a great part, at least one-half of the Bills of Mortality; to confirm this I have examined several yearly bills, and I find that the out-parishes generally bury more than the ninety-seven parishes within the walls, and the parish of Stepney singly, very near as many as the City of London yearly; this sufficiently shows what little help and care are taken of the poor sick, which so much abound in all those places.†

Of course there lurks a fallacy in all statistics of disease wherein conditions of life are not discriminated. Whether patients survive or die from any zymotic

* *Letter to Dr. Jurin.* London, 1723. † *Ibid.*

ailment depends upon their breed, their circumstances, their habits, and their medical treatment and nursing—all essential particulars, yet difficult to define and register on a large scale. It would appear that in sound constitutions, and with fair treatment, smallpox in 1721 was by no means deadly, whilst in bad constitutions, and with exposure and neglect, it was extensively fatal. Yet of these differences, little account was taken by the Inoculators, and the malady was measured and discussed as though it were something uniform like water or gold. Massey in one year had 49 cases of smallpox and one death; in Stepney an equal number of cases might have shown a mortality of 20 or 30 per cent.; whilst Dr. Nettleton reported that of 1245 cases in Halifax and adjacent towns in Yorkshire, there died 270, or about 22 per cent.*

One of Massey's fears in relation to inoculation was the risk of poisoning the blood with more than smallpox. He was not disinclined to experiment with "duly prepared children infected with smallpox by inspiration," for then—

> They will run no hazard of being infected by a leprous, venereal, or scrofulous taint that may, for aught we know, be transplanted by inoculation.†

Massey's prescience has been woefully verified; is indeed under perpetual verification in the pollution and destruction of multitudes of infants. The notion that virus with a complex of qualities can be transferred from one body to another, and operate with the single quality the operator is pleased to favour, is a notion that might pass muster in a manual of magic or folk-lore, but which never can have any warrant in human physiology.

Of course the chief strength of the opponents of inoculation (ere experience gave them stronger ground) lay in the assertion of the folly of incurring a certain injury for an uncertain advantage. Whatever the risk of small-

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* *Mr. Maitland's Account of Inoculating the Smallpox Vindicated.* London, 1722, p. 20.

† *Letter to Dr. Jurin*, p. 12.

pox to those who have it, yet large numbers, it was argued, pass through life untouched; and why should they make themselves sick, and risk their lives in order to obtain a superfluous security! *

The frequent assertion that the clergy thundered against inoculation is untrue and invented for effect. The Rev. Edmund Massey, Lecturer of St. Alban, Wood Street, did preach a sermon against the new practice, and a fair sermon it was, according to the standard of sermons. Maitland published some remarks on the sermon, to which Massey rejoined; and if I select a passage from the rejoinder it will prove, better than any description, that the divine was more than a match for the surgeon. Said Massey to Maitland—

> Inoculation, in your sense, is an engraftment of a corrupted body into a sound one; an attempt to give a man a disease, who is in perfect health, which disease may prove mortal.
>
> This I said was tempting Providence.
>
> To which you reply, It resembles that of a person who leaps out of a window for fear of fire; and surely that can never be reckoned a mistrust of Providence.
>
> No, certainly, Sir, if his house be really on fire, and the stairs burnt. 'Tis the only probable way of safety left; and if the leap should kill him, the action could neither be called sinful or imprudent. But what should we say to a man, who jumped out of the window when his house was not a-fire, only to try what he might perhaps be forced to do hereafter? This mad action exactly hits the case between us. For if my house be not on fire, that is, if I am in no apparent danger, what need I jump out at the window? What occasion is there to inoculate me?
>
> To carry on your own allegory, I would ask you, Sir, what human or divine authority you have to set a man's house on fire, that is, put a man who is in perfect health in danger of his life by a fit of illness? His own consent is not sufficient, because he has no more lawful power over his own life or health than you have, to put either of them in hazard. †

In short, nothing can be more unfounded than the assumption in literature, popular and professional, that Maitland and Montagu were confronted by a crowd of

* Jurin's *Yearly Account of Inoculation*, p. 13.

† *Letter to Mr. Maitland in Vindication of the Sermon against Inoculation.* London, 1722.

howling fanatics over whom they triumphed as light over darkness. Marvellous is the imbecility wherewith biographers and historians reproduce the fables of any inventive predecessor.

I shall now proceed to show that the practice of inoculation introduced by Cotton Mather to New England, and by Maitland to England, collapsed in a few years under stress of the mischiefs and fatalities which attended it; that it was revived in a subsequent generation; that it proved a curse wherever practised; and that finally it was abandoned with execration in the Western world.

CHAPTER V.

COLLAPSE OF INOCULATION.

We sometimes fetch from afar what is to be found at our own doors; and thus it was with inoculation. No sooner was the great Eastern preventive advertised than it was said—Why, it is nothing more than a practice common in Wales and the Highlands of Scotland! Perrot Williams, M.D., and Richard Wright, surgeon, of Haverfordwest, communicated to the Royal Society* that the people in Pembrokeshire had practised inoculation "time out of mind." They either scraped the skin thin or pricked it with pins, and then rubbed in pus from a smallpox patient. This they called "buying the smallpox," as it was customary to pay something for what was fancied to be "good matter." The Welshmen gave the same account of the practice as the Turks—there was no danger, no mishaps, and certain security from smallpox. In Scotland it did not appear that the skin was scraped, but worsted threads saturated with pus were tied round the wrists of children to whom it was desired to communicate the disease.†

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* *Philosophical Transactions*, No. 375, 1723.

† *An Account of Inoculation in Scotland.* By A. Monro. Edin., 1765.

Dr. Thomas Nettleton, of Halifax, Yorkshire, was an early and energetic inoculator. He prepared his patients by vomiting, purging, and bleeding. He disliked Maitland's small punctures, and made gashes an inch long—one in the arm and one in the opposite leg, and inserted bits of cotton steeped in pus, and covered them up with plaster and rollers. It was his design to produce large wounds with copious discharges, so that peccant matter might be freely evacuated. He was well satisfied with his heroic practice, and a record of his cases was sent to the Royal Society*—a record from which any reader will be apt to conclude that there was little to choose between Nettleton's inoculations and smallpox itself. He made no pretence that inoculation induced a trifling ailment, but only one less serious than the spontaneous disease, congratulating himself on having conveyed some sixty inoculated patients through grave peril; whilst, he wrote—

> In Halifax, since the beginning of last winter, 276 have had the smallpox, and out of that number 43 have died. In Rochdale, a small neighbouring market town, 177 have had the distemper, and 38 have died. It is to be noted that in this town [Halifax] the smallpox have been more favourable this season than usual, and in Leeds they have been more than usually mortal; but upon a medium there have died nearly 22 out of every 100 in these three towns, which is about a fifth part of all that have been infected in the natural way.†

English experience quickly made an end of the fiction under cover of which inoculation had been introduced—that it was attended with no risk, and might be performed by any old woman. Dr. Jurin, secretary of the Royal Society, and a steady advocate of the practice, thus laid down the conditions considered essential to success—conditions arrived at through stress of suffering and disaster—

> Great care ought to be taken to inoculate none but persons of a good habit of body, and free, not only from any apparent, but, as far as can be judged, from any latent disease.

* *Philosophical Transactions*, No. 370, 1722.
† Letter from Dr. Nettleton to Dr. Jurin, dated Halifax, 16th June, 1722.

The body, especially if plethoric, ought to be prepared by proper evacuations—as bleeding, purging, vomiting, etc.—though in many cases there will be occasion for very little or none of these, it being sufficient to enjoin a temperate diet and proper regimen. But this must be left to the judgment of the physician.

The utmost caution ought to be used in the choice of proper matter to communicate the infection. It should be taken from a young subject, otherwise perfectly sound and healthful, who has the smallpox in the most favourable manner. When the pustules are properly maturated, and just upon the turn, or soon after, two or three of them should be ripped with a glover's needle or small lancet, and a couple of small pledgets of lint or cotton are to be well moistened with the matter, and immediately put into a little vial or box, and carried in the warm hand or bosom of the operator to the house of the person to be inoculated.*

The publication of these conditions was little short of a practical surrender, and the opponents of inoculation were not slow to avail themselves of the advantage. What had been proclaimed the easy and universal defence against smallpox proved hedged about with precautions and preparations for which only health with wealth was equal. Where was the profit, argued Francis Howgrave, of a practice which leaves the feeble and delicate and poor to their fate, which makes the well sick, and wounds those that are whole, whilst smallpox in the natural way very rarely affects life where the habit of body and constitution are good.† Isaac Massey was especially indignant over Jurin's comparison of the mortality of smallpox with the mortality of inoculation. Jurin reckoned that out of every 100 who took smallpox, 20 died, whilst only 2 in 100 died from the effects of inoculation. "He forgets," said Massey, "that the inoculated are picked lives. If this be fair, Hang fair!" Massey was right. It was absurd to institute a comparison between the common smallpox, comprising that of the poor and neglected, and the well-fed and carefully tended subjects of inoculation. Massey, too, was strong in his own experience, saying—

* *An Account of the Success of Inoculating the Smallpox in Great Britain.* By James Jurin, M.D.

† *Reasons Against the Inoculation of the Smallpox.* By Francis Howgrave, Apothecary. London, 1724.

I have a list of the names of 32 children, who are all that have had the smallpox during the last two years [1727] in Christ's Hospital, and every one recovered. I have had, besides, 17 or 18 more in my private business, of whom only one died. Here, then, we have 49 cases of natural smallpox and but 1 death.*

Emphatic likewise was his protest against the exaggeration of the inoculators.

A natural simple smallpox seldom kills, unless under very ill management, or when some lurking evil that was quiet before is roused in the fluids and confederated with the pocky ferment.†

At this point we may see the judgment and the fears of the English people had gone against inoculation, and the practice appeared destined to gradual extinction. According to the inoculators, their work was thus summarised—

182 inoculations in 1721 and '22, with 3 deaths.
292 ,, in 1723, with 6 deaths.
40 ,, in 1724, with 1 death.

Prince Frederick and Prince William were among the inoculated of 1724.

256 inoculations in 1725 and '26, with 4 deaths.
124 ,, in 1727 and '28, with 3 deaths.

Dr. Scheuchzer, in 1729 tabulated‡ the cases and results of these years, 1721-28, as follows—

Age.	No. operated upon.	Successfully inoculated.	Had imperfect Smallpox.	Did not take.	Died.
Under 1 year, . .	24	24	0	0	2
1 to 2, ,, . .	34	33	0	1	4
2 to 3, ,, . .	65	65	0	0	1
3 to 4, ,, . .	91	88	0	3	1
4 to 5, ,, . .	65	63	0	2	1
5 to 10, ,, . .	257	249	3	5	3
10 to 15, ,, . .	140	131	1	8	1
15 to 20, ,, . .	104	95	3	6	2
20 and upwards, .	110	91	6	13	2
Unknown, . . .	7	6	0	1	0
	897	845	13	39	17

* *Remarks on Dr. Jurin's Last Yearly Account of the Success of Inoculation.* By Isaac Massey. London, 1727. † *Ibid.* p. 5.

‡ *An Account of the Success of Inoculating the Smallpox in Great Britain.* By John Gasper Scheuchzer, M.D. London, 1729.

Thus stood the account by the inoculators' own showing, and it was by no means a satisfactory balance-sheet. What strikes one painfully in looking over it, is the vast preponderance of the young and defenceless (780 out of 897) upon whom the abominable experiment was tried. "Helplessness which commands the protection of the brave is the opportunity of the investigating sneak." Whilst the inoculators argued laboriously that if some danger attended artificial smallpox, it was trifling to that attached to the spontaneous disease (among other obvious replies), it was maintained that only after much wider experience could it be known what were the precise effects of inoculation. Inoculation, as introduced by Maitland in 1721, had proved vastly different after acquaintance, and there was no telling what remained to be revealed. As Dr. Wagstaffe observed—

> Had it always been slight, gentle, safe, and useful, with all those alluring epithets bestowed on it; had none had above a hundred or two hundred pustules, and no one died of it in the space of several years; and had there been no instance of any one's being ever again infected with smallpox who had any pustules at all, how few soever, raised by inoculation, nobody would sooner have subscribed to the practice than myself.*

The primal promise that the inoculated were thereafter proof against smallpox was speedily belied, but that difficulty was disposed of by the assertion that inoculation in such cases must have been imperfect, for it was impossible for any one to have smallpox twice. The admission of fatalities from inoculation was very tardily made; and they were generally referred to some cause perversely concealed from the inoculator, which, had he known, would have prevented his operation. Then, the manifest fatalities were naturally suspected to stand for a larger number sedulously kept out of sight. As Massey put it—

> The ill success of inoculation is very partially and sparingly given to the world. The operator will not tell it, who lives by the

* *Danger and Uncertainty of Inoculating the Smallpox*, p. 64.

practice; nor will the relations, to whose authority the mischief is owing, be fond of revealing that to the public, which is grief to them in private.*

Fortunately for the public, several of the mishaps occurred in "good society," and were too conspicuous to be hushed up or denied. Miss Rigby died eight weeks after inoculation, "miserably disordered by the operation." A son of the Duke of Bridgewater and a son of the Earl of Sunderland likewise perished; and a servant of Lord Bathurst died of confluent smallpox "consequent on engraftment." Such incidents struck terror everywhere, and caused wise and timid alike to face the ills they knew rather than risk certain peril for uncertain advantage.

Maitland returned to Scotland, his native country, in 1726, and, going among his relations in Aberdeenshire, showed off his skill by inoculating six children. One of them, Adam, son of William Urquhart of Meldrum, aged 18 months, sickened on the seventh, and died on the eighth day. There was a great outcry, and Maitland tried to excuse himself by asserting that Adam was afflicted with hydrocephalus, which had been improperly concealed from him. Anyhow, the Aberdeenshire folk were satisfied with their experience, and recommended "Charlie Maitland to keep his new-fangled remedy for the English in future." He was more fortunate in the west of Scotland, where he "inoculated four children of a noble family," who escaped alive. The Scots, however, were deaf to his persuasions, and he made no headway among them. At a later date, 1733, inoculation began to be practised in and about Dumfries, and occasionally elsewhere.

In Ireland little more was effected than in Scotland. It was said that 25 inoculations took place between 1723 and 1728 with 3 fatalities. Dr. Bryan Robinson inoculated five children in Dublin in 1725, and was the death of two of them.†

Inoculation met with faint acceptance on the Continent. Maitland went over to Hanover in 1724 and

* Massey's *Remarks*, p. 18. † Scheuchzer and Massey.

inoculated Prince Frederick and eight children of Baron de Schulenberg. In France the practice had been discussed by Dr. Boyer so far back as 1717; and in 1723 the English experiments were recounted in Paris with much enthusiasm by Dr. de la Coste, evoking a declaration from the College of Physicians, "that for the benefit of the public, it was lawful to make trials of inoculation." A commencement was about to be made in the hospitals under the sanction of the Regent, the Duke of Orleans, when his death put a stop to the design. Soon after Dr. Hecquet published *Raisons de Doute contre l'Inoculation*, which, coupled with bad reports from England, made an end of the project.

If a London journalist had been called upon in 1728 to report upon Inoculation, he might have written as follows—

Seven years ago the practice was introduced to this country under powerful auspices. It was confidently averred that anyone might have his blood infected with the virus of smallpox, that a trifling ailment would ensue, and that thenceforward he would be secure from smallpox in the natural form. Experience rapidly belied these promises. The trifling ailment proved, in many cases, a serious ailment—so serious that physicians tried to anticipate and mitigate its severity by a preliminary regimen of bleeding, purging and vomiting. So exhausting and hazardous is the whole operation, that only sound and vigorous constitutions are considered fit for it; and the delicate and feeble, who require protection most, are advised to submit themselves as of old to the ordinary course of nature. Moreover, the induced smallpox is occasionally as severe as the spontaneous; the pustules are multitudinous, and sometimes confluent, with death for the issue. Fear may exaggerate the risks of inoculation, but more are believed to have perished than the inoculators are willing to confess. Again, many are not susceptible of inoculation, and though the infection fails to operate in their blood as desired, they do not always escape injury: they find their health disordered—are

rendered sickly and uncomfortable. Worst of all, what none at first reckoned on, the artificial smallpox turns out to be infectious, and begets natural smallpox in those who are with the inoculated. Thus, the very means taken to limit the disease become a cause of its extension. Smallpox was more than usually prevalent in Hertford in 1721, and in London in 1724, and there was fair reason to conjecture that it was extensively disseminated by inoculation. Lastly, it is doubtful whether even successful inoculation protects from subsequent smallpox; for it is maintained that some of the inoculated have already fallen victims to the natural disorder. In short, the preventive appears to have so many drawbacks that it is questionable whether it is not worse than the malady; and it is probable that in a year or two it will pass into forgetfulness in common with many other remedies as highly extolled on early and imperfect acquaintance.

So much might have been stated and prognosticated in 1728: how the prognostic failed to be verified remains to be told.

CHAPTER VI.

REVIVAL OF INOCULATION.

THE practice of inoculation, thus discredited, revived, and not only revived, but prevailed. The revival was gradual, and may be said to have acquired definition about 1748, under the powerful approval of Dr. Mead. In the score of years from 1728 to 1748, it is not to be imagined that the practice was abandoned: there were always a few repeating the attempt to have smallpox without the penalties of smallpox, but success was not conspicuous or encouraging. Inoculation was introduced to a generation specially disposed to receive it; and it was only allowed to slip for a time under the compulsion of manifest disaster. Perhaps there never was a people with such a taste for dodges in favour of health as the English of last century: the common intelligence was

invested in quackery. Even Wesley found time to dabble in medicine, and to compile a volume of prescriptions for his followers, entitled *Primitive Physic*—a piquant mixture of sense with absurdity and credulity. Our forefathers had no clear conception of the connection of physical well-being with physical well-doing, and many of the essential conditions of health were unknown to them. Their physical afflictions were regarded as mysterious dispensations to be endured with resignation or frustrated with medicines. The same attitude of mind is far from uncommon at the present day, and many will recollect how, ere sanitary science attained repute, it was considered profane to assert that typhus was subject to control, and that cholera might be suppressed; whilst a drug to subdue either would be heard of with gratitude. Superstition has rarely had any objection to the apothecary.

An incident passed over in histories, although far more inwardly characteristic of the mind of the 18th century than a multitude of the superficialities wherewith their pages are cumbered, is that of Joanna Stephens and her remedies for the stone. Her cures were so remarkable and (on evidence) so indisputable, that a general demand arose for the revelation of her secret for the public benefit. This revelation Mrs. Stephens agreed to make on receipt of £5000 as compensation; and a subscription was started, to which Fellows of the Royal Society, physicians, noblemen, bishops, ladies, and kindly folk of all orders set their names. Such, however, was the unanimity and anxiety to possess the Stephens secret, that it was pronounced a national concern, and Parliament was invoked to supply the requisite funds; whereon an Act was passed "for providing a reward to Joanna Stephens upon a proper discovery to be made by her of the medicines prepared by her for the cure of the stone." The discovery was duly disclosed to appointed trustees, one of whom was Archbishop of Canterbury, and the £5000 was paid over in 1739; and here we have the heads of the precious revelation—

My medicines are a Powder, a Decoction, and a Pill.

The Powder consists of egg-shells and snails, both calcined.

The Decoction is made by boiling camomile, fennel, parsley, and burdock leaves (together with a ball, which consists of soap, swine's cresses burnt to a blackness, and honey) in water.

The Pills consist of snails calcined, wild carrot seeds, burdock seeds, ashen keys, hips and hawes, all burnt to a blackness, soap and honey.

JOANNA STEPHENS.

16th June, 1739.

The public were apparently satisfied with the purchase, but with the usual levity of credulity forgot Mrs. Stephens and her marvellous cures in the pursuit of fresh nostrums. Fashions in medicine are on a par with fashions in dress, and have only occasional reference to the permanence and veracity of nature.

The revival of inoculation in England was stimulated by reports from abroad. For instance, in the *Gentleman's Magazine* it was stated that in 1737 there were inoculated in Philadelphia—

Men and Women, ...	32
Children under twelve, ...	64
Negroes, ...	32

and that out of the 128 only one Negro died. Again, in the same magazine for 1738 we read—

In Barbados in March last there were upwards of 3000 persons down in the smallpox, where inoculation is practised with great success.

Such reports, whilst secure from examination, were none the less effective over the public imagination. There was a report published by Dr. Mead in 1747, which derived great credit from his endorsement, and which continues to be cited to the present day as proof for inoculation, but which is a model of convenient and circumstantial vagueness worthy of Defoe. Thus Mead's story runs—

The following relation was communicated to me by a gentleman of great credit. He was a merchant at St. Christopher's in the West Indies, and in the making of sugar employed a great number of slaves. In one year, when the smallpox raged with more than

ordinary violence in the neighbouring islands, with his own hands he inoculated three hundred of them, from five to sixty years of age, with such success, that not one of them died, though most of them were negroes. And whereas all the Americans suffer this distemper in a most terrible manner, yet experience shows, that it is much more dangerous when it attacks the natives of Africa.*

Mead held positions which later and more exact inquiry rendered untenable. He would not allow that the pus of smallpox could communicate any disease but smallpox, *if* taken from a proper subject—a condition that required supernatural assistance to fulfil. He maintained that inoculation generated true smallpox, and that as no one could have smallpox twice, therefore no one could have smallpox after inoculation, and that reports to the contrary were not credible. It now goes without saying that in this contention Mead was at fault, but at the time his confidence was not inexcusable; and whilst defending and recommending inoculation, he made admissions which fully justified those who resisted and condemned his counsels. Let us not forget that the following passage was published in 1747, and was the fruit of six-and-twenty years of experience in the best London practice. Thus Mead wrote—

It ought not to be omitted, that boils and swellings under the ears and in the arm-pits arise more frequently after the distemper procured by art than after that which comes of its own accord; for this reason, as I suppose, that the venomous matter is pushed forward with less force, which disadvantages Nature makes amends for in this way.

Therefore all possible means are to be used to ripen such tumours of whatever kind they are: if this cannot be done, they must be opened by incision; and when all the matter is drawn out, the body must be purged by proper medicines, which are to be oftener repeated in this than in the natural disease.†

How just are the judgments of Divine Order! These boils, swellings, and tumours, were the sequences of the violated harmony of the body—of the faithless anticipation, the meddling and muddling with its processes.

* *Medical Works of Dr. Mead*, Vol. ii. p. 146. Edinburgh ed., 1765.
† *Ibid.* p. 149.

An extensive series of inoculations took place in 1742-45 in the south of England. Smallpox was prevalent in Winchester and adjacent towns, and Dr. Langrish operated freely on whoever resorted to him. In Portsmouth, Chichester, Guildford, Petersfield, and Winchester, it was said that at least 2,000 were poxed, and that only two pregnant women perished, who, as usual, "were inoculated contrary to the advice of their physician." The ill results, wrote Bishop Maddox, "were only such as might reasonably be supposed to have been worse had those operated on had smallpox in the natural way"—such being the euphemism wherewith boils, tumours, and other sequelæ were accounted for.

The reviving favour for inoculation was indicated in this paragraph from the newspapers of 13th April, in 1744—

> Fourteen children, three years old, having been inoculated for the smallpox in the Foundling Hospital, Hatton Garden, all with good success, the Governors have resolved to have all their children inoculated at the same age.

An important movement was made in 1746 with the opening of a Smallpox Hospital in Cold Bath Fields at which "the benefit of inoculation" was offered to the poor. At first those who applied were taken into the house, and nursed through their self-inflicted illness, but the proximity of the veritable smallpox, the regimen, and the seclusion were sufficient to deter applicants: those, however, who have a hobby to ride grow reckless in presence of obstacles, and by-and-by inoculation was offered to all comers, who were dismissed to recover and diffuse infection in their own homes.

With the revival of inoculation there was a revival of the controversy as to its lawfulness theologically. Dr. Isaac Maddox, Bishop of Worcester, preached a sermon on behalf of the Smallpox Hospital in St. Andrew's, Holborn, on 5th March, 1752,* which excited consider-

* *A Sermon before the Governors of the Smallpox Hospital.* Isaiah lviii. 7. London, 1752; second ed., 1753.

able attention. He showed the necessity for such an hospital for the poor and forsaken of the great city—a necessity incontestable. He mentioned (and the remark supplies a curious note on the hygiene of the time) that ventilators were to be introduced, and it was expected that the access of fresh air might benefit the patients. The return of the Hospital for 1752 showed 344 admissions, with 262 recoveries, and 82 deaths—a proportion that does not contrast disadvantageously with 19th century hospitals, fortified with sanitary appliances. During the same year 112 inoculations were effected at the Hospital. The Bishop had been assured by three eminent surgeons that they had inoculated 1500 persons with only 3 fatalities, one of them (Sergeant Ranby) having accomplished one thousand without a mishap. The practice was without doubt lawful, for it averted a dangerous disease, and some risk was inseparable from all methods of cure. The practice had already done much to lessen smallpox, and, as it became commoner, it would do more. The result of the sermon was a subscription of £809 for the charity at the subsequent dinner in the Drapers' Hall.

The Bishop was singularly at fault in his ascription of diminished mortality to inoculation, for, in 1752, smallpox was more than unusually rife in the Metropolis, and its prevalence was not unreasonably attributed to infection from the inoculated. In 1751 the deaths from smallpox in London were 998; they rose to 3538 in 1752; declined to 774 in 1753; and rose to 2359 in 1754.

Dr. Doddridge lent his powerful influence in favour of inoculation; and, considering the unqualified assertions of medical men as to its benefits and harmlessness, it cannot be said he was blameworthy. The audacious assurance with which many of them bore down opposition overcame the simple-minded, who argued as if the world were constituted after the pattern of their own innocent hearts. That smallpox frequently followed inoculation is now known beyond dispute, and yet Dr. Kirkpatrick wrote—

I have heard myself a great many rumours of the inoculated being naturally infected afterwards, which upon examination proved just as many lies.*

How could women and divines resist such evidence?

A voluble antagonist of inoculation was the Rev. Theodore Delafaye of Canterbury. He preached a sermon in that city on the 3rd of June, 1753, from the text, "Let us do evil that good may come" (Rom. iii. 8), and published it under the title of *Inoculation an Indefensible Practice.* He was in turn attacked by the inoculators, and in 1754 issued *A Vindication* of 200 pages, in which he returned more than he received with vigour rather than discretion. His conclusion was—

Inoculation I maintain to be, in a religious and moral view, a self-destructive, inhuman, and impious machination, and in a physical one an unreasonable, unnatural, unlawful, most hazardous, ineffectual, fruitless, uncertain, unnecessary device; in a word, a practice which nature recoils at, which reason opposes, and which religion condemns.

We sometimes read that inoculation was denounced as Atheism, and we are expected to reprobate or to smile at the bigotry; and, whilst we may not approve of the stigma, we may at the same time recognise the honest sense in which it might be affixed. Some who spoke of inoculation as Atheistic felt more vividly than they could otherwise describe, that it was an infraction of the deeper sanctity of Nature, where man's hand cannot enter and prosper, and that those who made the attempt could have no proper sense of Him in whom they lived, and moved, and had their being. Moreover, if we are to admit that they who thus expressed themselves are blameable for excessive vehemence, what are we to say of the more numerous party who did not hesitate to pronounce inoculation a discovery effected in the human mind by God himself? If it was reasonable to speak of the practice as Theistic, why should it be fanatical to assert the contrary, and maintain that it involved a negation of Divine Providence? Dr. Kirk-

* *An Analysis of Inoculation*, 2nd ed. 1761, p. 145.

patrick, with the sycophancy which was the custom of his age, praised George II. for "the benevolent, and even celestial disposition," which induced him to patronise "the wonderful and probably Heaven-descended practice of inoculation;" and extolled "its equal simplicity and success" as demonstrating "to a reflective mind the goodness of Providence in making what may be so often necessary, so easily accomplished." * It would not be difficult to cite scores of confessions of gratitude to God for inoculation, but to what purpose?

What we think good we necessarily ascribe to God; and we do well; but much that we think good is otherwise, or is only partially good; and what then? Why, we are undeceived and corrected by experience. We put our notion of what is good to the test of practice, and God answers us in the event—justifies, amends, or confounds us. Thus with inoculation. It was fair that those who thought it good should refer it to God, and thank him for it; and it was equally fair that those who thought it bad should say it was none of his—that it was at variance with his order, and a discredit to the intelligence of those who imputed it to Him. How was the issue to be determined? Only by God himself. And how would He speak? In the results of experience wherein his will would become manifest beyond equivocation.

In 1754 inoculation obtained full recognition from the London College of Physicians. It was declared "that experience had refuted the arguments urged against the practice; that it was now more extensively employed in England than ever; and that it was highly beneficial to mankind." The fence of hesitation was thrown down, and to be inoculated became the distinction of all who wished to be numbered with the enlightened and prudent. That the Circassians were famous for their beauty, and that they practised inoculation, was a staple argument, and an irresistible, with a multitude of Englishwomen. Opposition was chiefly confined to the lower orders, who

* *Analysis of Inoculation*, p. 348.

objected to have the inoculated at large among them, and in some places threatened to demolish the houses where inoculation was performed.* Occasionally a medical practitioner acquired reputation as an inoculator, and was resorted to by patients from a distance, and his operations were not regarded with much favour by his neighbours. Thus the physicians and surgeons of Newbury, Berks, were compelled by their townsmen to promise to inoculate no one who had not resided in Newbury at least two years.

The new practice created much business, and its distribution excited some jealousy. Physicians complained that surgeons inoculated without their assistance, and surgeons that apothecaries did so likewise. Dr. Kirkpatrick laid down the rule that every rightly conducted inoculation involved the employment of physician, surgeon, and apothecary—the physician to prepare and prescribe for the patient, the surgeon to cut, infuse, and dress, and the apothecary to make up the medicines. Some, however, dispensed with all three, and effected their own inoculations. A boy poxed fourteen of his schoolfellows in sport, and amateur inoculators, male and female, multiplied. As an example of amateur procedure, Dr. Kirkpatrick relates that a gentleman of Kent sent his servant, Silvanus, a young man, to Mrs. Chapman, at Heathfield, to be inoculated. He had to ride thirteen miles, and arrived hot and fatigued at the house of the inoculatrix. As he had taken his preparatory physic at his master's, Mrs. Chapman desired him to get ready at once for the operation, which he begged her to defer as he was in such a heat. She replied that he must be inoculated that very day, Tuesday, or remain until the following week, for Tuesday was her lucky day. The poor fellow allowed himself to be persuaded, and was then and there inoculated: severe smallpox ensued, and he died. †

Thus was inoculation revived and established, and smallpox with it—established and diffused.

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* *Gentleman's Magazine*, March, 1753.

† Kirkpatrick's *Analysis of Inoculation*, p. 359.

CHAPTER VII.

TRIUMPH OF INOCULATION.

It having come to pass, according to the boast of Dr. Kirkpatrick, that inoculation was regarded as "the most salutary practice ever discovered for restraining a very loathsome and destroying disorder, which it had nearly expunged from the catalogue of mortal diseases," it was the aim of physicians and patients to reduce the trouble and hazard of the operation to the lowest terms possible. In the words of Dr. Jenner, "There was bleeding till the blood was thin, purging till the body was wasted to a skeleton, and starving on vegetable diet to keep it so;" and practitioners who promised to mitigate these rigours, placed themselves in the line of popularity and prosperity.

Among distinguished easy inoculators was a family named Sutton—"the Suttons" being a familiar name a century ago. Dr. Robert Sutton practised surgery and pharmacy at Debenham, in Suffolk, and went into inoculation with such energy that between 1757 and 1767 he operated on 2514 patients. His son, Robert, set up as inoculator at Bury St. Edmunds, where he did a large business; but a second son, Daniel, was the genius of the household. He had been acting as assistant to Mr. Bumstead at Oxford, and returned to his father in 1763 enthusiastic over a new plan of inoculation whereby the time of preparation was to be shortened, whilst the patients were to live in the open air. Old Sutton showed no favour for the projected innovation, whereon Daniel opened an inoculating house on his own account at Ingatestone, in Essex, advertising himself as inoculator on a new, safe, and sure method. The speculation answered. In 1764 he took 2000 guineas, and in 1765 his receipts were £6300. His fame spread throughout the country, and so many resorted to him that lodgings were scarcely to be had in and around Ingatestone. His practice in Kent was also extensive, and he was obliged to employ assistants. To crown his enterprise, he kept

a parson—the Rev. Robert Houlton, to puff his skill and success. According to Houlton, the business of Daniel Sutton during three years was as follows—

Inoculated in	1764, . . .	1629
,,	1765, . . .	4347
,,	1766, . . .	7816
		13,792

to which number was added 6000 inoculated by Sutton's assistants, making a total of 20,000, without, said Houlton, a single death.*

Sutton was denounced as a quack, and if to reserve as one's own, and to traffic in what is proclaimed to be for the common advantage of mankind, constitutes a quack, Sutton was one. Nevertheless, he was successful, and his success begot so much jealousy that he was indicted at the Chelmsford quarter sessions, but acquitted with the thanks of the grand jury for the lesson he had taught the Faculty.

Much ingenuity was exercised in ferreting out Sutton's secret. His secret, so far as it was anything, was an open one; and supposing it necessary to infect men's blood with variolous pus, and then to operate for their recovery, there would be much to say for Sutton's procedure. His patients were obliged to go through a strict preparatory regimen for a fortnight, during which every kind of animal food, with the exception of milk, and all fermented liquors and spices were forbidden. Fruit of all sorts was allowed, unless on days when purges were taken. In the course of a fortnight a powder was thrice administered at bed-time, and a dose of salts on the succeeding morning. When the days of preparation were accomplished, the patient was taken to the inoculating house, where in the public room was found an array of people in various stages of smallpox. From one of these sufferers, the operator selected a pustule to his mind, opened it with his lancet, and, turning to the

* *Sermon preached at Ingatestone, 12th October, 1766, in defence of Inoculation, with App. on the present state of Inoculation.* Lond., 1767.

patient to be poxed, raised the cuticle on the outer part of his arm with the moist lancet, and pressed it down with his finger. This was the entire operation: no plaster or bandage was applied: and from that moment the patient was pronounced proof against smallpox, even if he should lie in bed with one suffering from the disease. Of course there remained the variolous affection to be dealt with. The regimen of preparation was continued unchanged, and a pill was taken nightly until the fever came on. None were allowed to rest in bed, except for sleep, but had to walk abroad and enjoy fresh air, even in winter weather. If a patient was too sick to go alone, he was supported by attendants; and when the fever was at its height, he was encouraged to drink copiously of cold water.

Much more was attributed to Sutton's pills and powders than to his regimen, and these were no more than preparations of antimony and mercury, with which practitioners of all orders were only too familiar. Sutton, however, contrived to maintain his mystery until he had no longer occasion for it, and lived to recognise a successor in Jenner. He removed to London in 1767 in hope of enlarging his income, but like many other provincial celebrities, discovered that he had better have remained where he shone without rivals and detractors.

The Sutton regimen, so far as it might be described as "cool," came into general favour, whilst what was called the hot regimen of warm rooms, bed, and cordials was correspondingly discredited. Contrasting the two methods, Sir George Baker, writing in 1771, observed—

> I found that in the counties of Norfolk, Suffolk, and Essex, many thousands of people of all ages and constitutions, and some of them with every apparent disadvantage, had been inoculated with general good success; whereas at Blandford, in Dorset, out of 384 who were inoculated, 13 actually died, and many others narrowly escaped with their lives from confluent smallpox.*

A famous inoculator was Dr. Thomas Dimsdale of Hertford, a Quaker of easy principles. He published in

* *Medical Transactions*, vol. ii. art. xix.

1766 a treatise entitled *The Present Method of Inoculating for the Smallpox*—an exposition of the most approved practice of the time, which, by one of those curious felicities of circumstance, conferred on him a European reputation; and in 1781, *Tracts on Inoculation*—a record of his opinions and adventures at home and abroad.

Dimsdale desired to universalise inoculation, but with circumspection. He recommended that the inhabitants of a suitable district should be dealt with as a whole and at once. That the names of all should be taken, and on a certain day that everyone, who had not had smallpox, should be inoculated. That the district should then continue in quarantine for about three weeks, at the end of which the danger and the fear of smallpox would cease, until an unpolluted generation should afresh accumulate. The project was not mere dreaming. Dimsdale was a man of influence and energy, and effected several complete inoculations of villages and parishes in Hertfordshire according to his plan. In later years, he combined banking with medicine, and the firm of Dimsdale, Fowler, and Co. of Cornhill originated with him and perpetuates his name.

Dimsdale's practice lay chiefly among the upper classes, to whom he made matters very comfortable. As he wrote—

> I do not enjoin any restriction in respect to diet, nor direct any medicines to be taken before the time of operation by such as appear to be in a proper state of health.*

He was satisfied with administering a powder on the evening of the day on which a patient was inoculated, consisting of calomel, tartar emetic, and crabs' claws.

Whilst labouring to popularise inoculation, Dimsdale was strongly opposed to the trade therein passing to unauthorised hands—simple, safe, and salutary though he asserted it to be. Thus he averred—

> The mischiefs arising from the practice of inoculation by the illiterate and ignorant are beyond conception.†

* *Tracts on Inoculation*, p. 126. † *Ibid.* p. 107.

How illiteracy should affect inoculation, he left to conjecture. He apparently forgot that the practice was derived from people who made no pretence to literature, and whose efficiency and success were, moreover, set forth as warrant and encouragement for English imitation.

In 1775 a Society was formed for General Inoculation, and an hospital was opened for the purpose at Battle Bridge, on the site of what is now the Great Northern Railway station, King's Cross. Dr. Lettsom, a popular Quaker physician, issued an appeal on behalf of the enterprise, and having invoked Dr. Dimsdale's approval, a lively controversy ensued between the brethren—personal rather than profitable. Dimsdale disapproved of indiscriminate inoculation: he was ready to inoculate the whole world, but systematically, and under strict safeguards. He pointed out that whatever might be the advantage to the individual, unless the inoculated patient was rigorously secluded, he would diffuse the disease from which he sought to be delivered, and that the price of his life might be the destruction of many. Dimsdale's warnings were, however, slightly regarded, and inoculation was pursued with criminal recklessness. As Pascal observes, of all the faculties given to man, the most awful in its consequences is the power of standing amid a number of facts, and seeing such as we please to see, and being blind to the rest.

Specially remarkable in connection with the smallpox of last century was the exaggerated terror expressed for it by professional inoculators, and the little real terror manifested by the multitude. It was by no means the most fatal of diseases, nor was it a large factor in the common mortality. Wherever we test the matter by unbiased contemporary evidence, we find the outcry factitious: the dreadful and desolating malady from which Jenner delivered his country is merely a fiction continued by the vaccinators from the inoculators. For proof let us turn to the evidence of Dr. Alexander Monro, Professor of Medicine and Anatomy in the University of Edinburgh. The Faculty of Medicine in Paris had

appointed a commission to inquire into the advantages of inoculation, which in the course of duty applied to Monro, who in response produced and published in 1765 *An Account of the Inoculation of Smallpox in Scotland.* He reported that from the introduction of the practice by Maitland in 1726, there had been 5554 inoculations effected in Scotland with 72 fatalities; that is to say about 140 annually with deaths 1 in 78, according to the confession of the inoculators themselves. Monro further stated that the practice was disliked in Scotland as "a tempting of Providence," an unwarrantable risk of life for an uncertain advantage. Our present interest, however, is in the statistics of deaths from smallpox in Edinburgh for a series of twenty years thus adduced by Monro.

	Burials from all Diseases.	From Small pox.		Burials from all Diseases.	From Small-pox.
1744	1345	167	1754	1215	104
1745	1463	141	1755	1187	89
1746	1712*	128	1756	1316	126
1747	1200	71	1757	1267	113
1748	1286	167	1758	1001	52
1749	1132	192	1759	1136	232
1750	1038	64	1760	1123	66
1751	1241	109	1761	903	6
1752	1187	147	1762	1305	274
1753	1105	70	1763	1160	123
	12,709	1256		11,613	1185

Here we have a piece of valid experience with every advantage to the smallpox terrorist: for Edinburgh last century was a city contrived as if for the generation and perpetuation of smallpox. The population of 55,000 was lodged thickly in flats, in houses of many storeys, closely built in lanes and courts—a population densely compacted as any in Europe, with arrangements for cleanliness indescribable, at this day perhaps incredible. Yet in conditions so propitious to smallpox, we see before us

* Monro accounts for the excessive mortality of this year by the presence of regiments in Edinburgh after the suppression of the rebellion of 1745.

the total outcome during a series of twenty years; and reprehensible as the result may appear to contemporary sanitarians, who hold, and rightly hold, that all zymotic diseases are preventible, yet it affected Monro with no anxiety or dismay: nor does the rate of mortality of old Edinburgh contrast unfavourably with that of the modern city. The case of Edinburgh, however, serves to show that in all cases when we hear of the ravages of smallpox before Jenner appeared as deliverer, our policy is to insist firmly upon the production of special and adequate evidence: it is monstrous that the assertions of common quacks, whether inoculators or vaccinators, should pass into tradition and be accepted as unquestionable verity.

We have, moreover, to observe that the mortality from smallpox in Edinburgh was infantile mortality: for as Monro testified—

> The inhabitants of Scotland generally have the smallpox in their infancy or childhood; very few adults being seen in this disease. Whether this is owing to any particular constitution of the air, or of the people, or to the disease not being so much dreaded as to cause any to fly from the place where it is, or to the great intercourse which must be among the inhabitants of the towns, of which several, nay, many families enter to their houses by one common stair, while in the villages the peasants are generally assistant to their neighbours of whose family any is sick, it is not now necessary to inquire.

Not only were the habits of the people contributory to the diffusion of eruptive disorders, but likewise their food, of which oatmeal was the staple, whilst vegetables were few, fruit rare, and tea unknown. Hence many maladies had free course; and as Dean Ramsay relates, a girl on her arrival at Mrs. Betty Muirheid's boarding-school in the Trongate, Glasgow, when asked whether she had had smallpox, replied, "Yes, mem, I've had the sma'pox, the nirls [measles], the blabs [nettle-rash], the scaw [itch], the kink-host [whooping-cough], the fever, the branks [mumps], and the worm [toothache]."

A last word as to Lady Mary Wortley Montagu. After a residence of twenty years in Italy, she returned to

England to die, 21st August, 1762. On the west side of the north door in Lichfield Cathedral, there is a female figure, in marble, leaning on an urn inscribed M. W. M. The inscription runs—

SACRED TO THE MEMORY OF
THE RIGHT HONOURABLE
LADY MARY WORTLEY MONTAGU,
WHO HAPPILY INTRODUCED, FROM TURKEY,
INTO THIS COUNTRY,
THE SALUTARY ART OF INOCULATING THE SMALLPOX.
CONVINCED OF ITS EFFICACY,
SHE FIRST TRIED IT WITH SUCCESS
ON HER OWN CHILDREN,
AND THEN RECOMMENDED THE PRACTICE OF IT TO
HER FELLOW-CITIZENS.
THUS, BY HER EXAMPLE AND ADVICE,
WE HAVE SOFTENED THE VIRULENCE, AND
ESCAPED THE DANGER, OF THIS MALIGNANT DISEASE.
TO PERPETUATE THE MEMORY OF SUCH BENEVOLENCE,
AND TO EXPRESS HER GRATITUDE
FOR THE BENEFIT SHE HERSELF RECEIVED FROM
THIS ALLEVIATING ART,
THIS MONUMENT IS ERECTED BY
HENRIETTA INGE,
RELICT OF THEODORE WILLIAM INGE, ESQ.,
AND DAUGHTER OF SIR JOHN WROTTESLEY, BART.,
IN THE YEAR OF OUR LORD,
MDCCLXXXIX.

Whilst we do not resort to epitaphs for truth, we may discover in them what was taken for truth, or what was wished to be taken for truth. We have in the foregoing epitaph the legend which has caught the popular fancy, and which is likely to survive corrections innumerable. It is the custom of mankind to identify a common movement with some prominent or picturesque figure in the movement, and to suppress the rest. The practice is convenient, but it taints all history with fable.

It may be said that the practice of inoculation met with no active resistance in England during the last thirty years of last century. How widely and deeply it extended it would be difficult to determine. The pro-

bability is, that the mass of the population was untouched, and that inoculation was limited to the upper and middle classes, and to the lower so far as they came under the immediate influence of those above them. We have, perhaps, an index to the condition of affairs in Dr. Wm. Buchan's *Domestic Medicine*, first published in 1769, which ran through eighteen editions, amounting to 80,000 copies, in the author's life-time. It is not uncommon to refer contemptuously to Buchan, but his work was the production of a man of vigorous good sense with faith in the good sense of his readers—a book creditable to the author and to the people who appreciated him.

Buchan was an inoculator, a zealous advocate of inoculation, and earnestly laboured to universalise the practice. In the *Domestic Medicine*, ed. 1797, he wrote—

> No discovery can be of general utility while the practice of it is kept in the hands of a few. Had Inoculation been practised by the same kind of operators in our country as in the countries from which we derived it, it had long ago been universal. The fears, the jealousies, the prejudices, and the opposite interests of the Faculty are, and ever will be, the most effectual obstacles to the progress of any salutary discovery. Hence it is that Inoculation never became in any manner general in England till taken up by men not bred to physic.

Consistently with this opinion, Buchan strongly advocated domestic practice, saying—

> They know very little of the matter, who impute the success of modern inoculators to any superior skill, either in preparing the patient or communicating the disease. Some of them, indeed, from a sordid desire of engrossing the whole practice to themselves, pretend to have extraordinary secrets or nostrums for preparing persons for inoculation, which never fail of success. But this is only a pretence calculated to blind the ignorant and inattentive. Common-sense and prudence alone are sufficient both in the choice of the subject and management of the operation. Whoever is possessed of these may perform this office for his children whenever he finds it convenient, *provided they be in a good state of health.*
>
> This statement is not the result of theory, but of observation. Though few physicians have had more opportunities of trying inoculation in all its different forms, so little appears to me to depend on those generally reckoned important circumstances, of preparing the body, communicating the infection by this or the

other method, etc., that, for several years past, I have persuaded parents and nurses to perform the entire operation themselves.

I have known many instances of mothers inoculating their children, and never so much as heard of one bad consequence. Common mechanics often, to my knowledge, perform the operation with as good success as physicians.

Having described the ordinary method of inoculation by incision with a lancet dipped in pus, he goes on to say—

If fresh matter be applied long enough to the skin, there is no occasion for any wound at all. Let a bit of thread, about half an inch long, wet with the matter, be immediately applied to the arm, midway between the shoulder and the elbow, and covered with a piece of common sticking-plaster, and kept on for eight or ten days. This will seldom fail to communicate the disease.

Instead of multiplying arguments to recommend this practice, I shall beg leave to mention the case of my own son, at the time an only child. After giving him two gentle purges, I ordered the nurse to take a bit of thread which had been previously wet with fresh matter from a pock, and to lay it upon his arm, covering it with a piece of sticking-plaster. This remained on six or seven days, until it was rubbed off by accident. At the usual time smallpox made their appearance, and were exceedingly favourable. Surely this, which is all that is generally necessary, may be done without any skill in medicine.

Thus was smallpox made easy!

Buchan appealed to the clergy for co-operation as inoculators—

The persons to whom we would chiefly recommend the performance of this operation are the clergy. Most of them know something of medicine. Almost all of them bleed, and can order a purge, which are all the qualifications necessary for the practice of inoculation.

And as propagandists—

No set of men have it so much in their power to render the practice of inoculation general as the clergy, the greatest opposition to it still arising from some scruples of conscience, which they alone can remove. I would recommend them not only to endeavour to remove the religious objections which weak minds have to this salutary practice, but to enjoin it as a duty, and to point out the danger of neglecting to make use of a means which Providence has put in our power for saving the lives of our offspring. Surely such parents as wilfully neglect the means of saving their children's lives are as guilty as those who put them to death.

How familiar have vaccinators rendered this line of adjuration! If you do not comply with our prescription, and your children catch smallpox, then are you their murderers.

Here is another passage from Buchan, which with equal accuracy might apply to Vaccination—is indeed what is perpetually asserted to be the truth concerning Vaccination—

As the Smallpox is now become an epidemical disease in most parts of the known world, no other choice remains but to render the malady as mild as possible. This is the only manner of extirpation now left in our power; and though it may seem paradoxical, the artificial method of communicating the disease, could it be rendered universal, would amount to nearly the same thing as rooting it out. It is a matter of small consequence whether a disease be entirely extirpated, or rendered so mild as neither to destroy life nor hurt the constitution; but that this may be done by Inoculation, does not now admit of a doubt. The numbers who die under Inoculation hardly deserve to be named. In the natural way, one in four or five generally dies; but by Inoculation not one of a thousand. Nay, some can boast of having inoculated ten thousand without the loss of a single patient.

In this deliverance, Buchan did not lie, nor did he speak for himself alone, but expressed the medical opinion of his time, precisely as a physician of to-day testifies concerning Vaccination. Yet we all know that Buchan was completely at fault, and substituted what he wished to be true for what was true.

I cannot leave Buchan without a few words in his favour, for, according to his lights, he was a worthy fellow, and the words shall be his own. He wrote—

I am old enough to remember the time when the success of Inoculation was supposed to be entirely owing to the preparation of the body, as it was called; but I am convinced that such preparation always has done, and still does, more harm than good. *The body cannot be better prepared to meet a disease, than by being in good health.* Medicine may cure a disease, but it cannot mend good health. When a person enjoys the blessing of health, he ought never to meddle with medicine on any account whatever.

No: nor with half an inch of thread dipped in pox.

CHAPTER VIII.

INOCULATION ABROAD.

BEFORE proceeding to relate how Inoculation was superseded and ultimately suppressed in England, it may be expedient to make some notes on the prevalence of the practice in other lands.

And first in New England where, as we have seen, Cotton Mather had precedence in subjecting the reports of eastern inoculation to the test of western practice. Mather and his coadjutor, Boylston, did not propose to make inoculation habitual, but to reserve it for use in epidemics. Sometimes years elapsed in New England without smallpox: there were no dense urban populations to constitute seats of zymotic disease: and to provide perpetually against what was occasional was obviously unnecessary. Nevertheless the colonists shared the common disposition of the time for pottering in remedies, and their slaves afforded convenient opportunities for experiments in which temerity had the sanction of beneficence. With the Whites, cleanliness, ventilation, drainage, and pure water, were conditions of accident rather than of providence, but with the Blacks life was that of the stye, and the consequences in smallpox were thought to be sufficiently accounted for by the assertion that Negroes were constitutionally pre-disposed to that disorder. Wherefore the Blacks from Boston to the Spanish Main were from time to time remorselessly inoculated, and all of them who afterwards escaped smallpox had their immunity ascribed to their inoculation.

Jonathan Edwards, the prince of Calvinistic divines, was killed by inoculation. There was an epidemic of smallpox in New Jersey, and, for security, Edwards was inoculated. The result was the generation of smallpox in a severe form, of which he died, 22nd March, 1758, in his 54th year. In search of a superfluous safety was he slain. A man of the age of Edwards had little to

fear from smallpox; for the disease, in the vast majority, was an affection of the young, concerning which, as having attained middle life, Edwards might have maintained comparative indifference.

The colonists usually ascribed any outbreak of smallpox to importation by shipping from Europe, if not manifestly, then covertly; for, it was held that smallpox could never be evolved spontaneously. Great pains were therefore taken to isolate patients, and Boston and other sea-ports had hospitals erected on sites remote from habitation, from which a flag was displayed whenever occupied by the sick. A physician who visited an hospital was required to take off his wig, to change his shoes, and to put on a gown which hung from his neck to his ankles; and, when he came out, to wash his hands, and be fumigated with frankincense. In setting forth these precautions, Professor Waterhouse of Cambridge, Massachusetts, observed in a letter to Dr. Haygarth of Chester—

> I cannot believe them altogether unnecessary. Our towns are small, our houses scattered, most of them having a garden between them, so that we have been able to trace the action of contagion. We have tried many experiments with smallpox in New England, and persuade ourselves that we have some pretensions of knowing more of that disease than you in Europe.

During the war with England, smallpox broke out in the American army, and inoculation was so freely resorted to that scarcely a man escaped the lancet. Washington had his New England soldiers inoculated at Cambridge in 1776, and it was difficult to find men to keep guard over the sick; that is to say, men who had passed through smallpox and were not considered liable to infection, a curious evidence of the rarity of the natural disease in the communities from which the army had been recruited.*

Cotton Mather's triumph over Boston was complete—complete beyond his intention; for it came to be as thoroughly inoculated as any town in these days is

* Humphries's *Life of General Putnam*, p. 151.

vaccinated. Dr. Waterhouse, writing on 28th October, 1788, said—

We find that in 1752 there were but 170 persons liable to smallpox in Boston, and in 1754, when there was a general inoculation in the town, I question whether there was a quarter of that number that did not receive the infection *viâ naturæ vel artis*. In the years 1776, '77, and '78 they inoculated pretty freely throughout the State. Two days ago, I was at the review of part of the militia of the county of Suffolk, and of 520 men, I scarcely think there were a hundred above twenty-five years of age that had not passed through smallpox by means of inoculation; and of 2000 reviewed a week or two before, in the county of Middlesex, there was not a greater proportion of the same age liable to take the disease. Since 1764 the dread of smallpox has lessened considerably; and since 1778 we meet the disorder with as little fear as any people you can mention.

In another letter, dated 15th October, 1787, the Doctor said—

I do not believe there is at present a single person infected by smallpox in all the four New England Governments, that is, not one in a million of people.*

However it may have been elsewhere, inoculation was conducted in Boston with a formality and deliberation that might have satisfied Dimsdale himself. There was an inoculation hospital erected on Sewell's Point, which juts into Charles River, remote by a mile and a half from the common road, and situated in pleasant grounds with trees and walks. Three weeks were devoted to inoculation and the subsequent sickness, and before dismissal, wrote Dr. Waterhouse—

The patients are washed all over in soap suds, then rubbed with brandy, and lastly washed in vinegar; they put on fresh clothes, and bury those they wore during their stay in the hospital. But even then they are smoked and fumigated with sulphur in the smoke-house, which is about twice the size of a common sentry-box. This smoke-house has a hole in its side for the patient to put his head out of during the operation. Although this seems formidable on paper, yet patients submit cheerfully, and with no slight merriment.

* These letters of Benjamin Waterhouse, M.D., Professor of Physic at Cambridge, Mass., appear in Haygarth's *Plan to Exterminate Smallpox*. London, 1793.

There are perhaps 150 under inoculation at present at Sewell's Point, not one of them paupers. They are principally children, perhaps thirty or forty of them of the first people in the commonwealth. The charge for the whole process is 8 dollars, or 36s. sterling, including every expense from incision to dismission. In some places they inoculate for half that sum. You must conceive the whole business conducted with a good deal of gaiety, where a patient, when ill, is as apt to be pitied as if sea-sick with a sailing party. The established system of mirth and good humour contributes not a little to the welfare of the patients.

It is a curious story, and stands in broad contrast to the rough and ready practice of Turkey, and of many inoculators in England and elsewhere. Dr. Waterhouse adds—

There were a considerable number of persons in Boston to whom smallpox could not be communicated by inoculation. In some the operation was repeated two, three, and four times with fresh matter. Several of these have had the disease severely since in the natural way, and some have died of it.

France was slow to accept inoculation. After its introduction in 1723, about thirty years elapsed without any serious movement in its favour, when Voltaire, Diderot, and their set began to recommend the practice, which had the merit of being English and disliked by those who held change and improvement in aversion. La Condamine read an eloquent paper on the advantages of inoculation before the Academy of Sciences; and Turgot, the ardent and sagacious lover of his kind, procured the inoculation of a child in Paris, 1st April, 1755; which was followed on 14th May by a young man, named Chastellux, submitting himself to the operation in the interest of the common welfare. Then Dr. Hosty was sent to London to investigate and report, and on his return issued these statements—

1. That out of 463 cases inoculated in the London Hospital, only one had been unsuccessful; whereas in the Smallpox Hospital nearly one in four had died.

2. That Mr. Ranby, principal surgeon to his majesty, had inoculated 1600 persons, and Mr. Bell 903, without the loss of one.

3. That to form a just comparison between the fatality of natural and artificial smallpox, it is only necessary to visit the London Smallpox Hospital and then the Inoculation Hospital: the difference

between the two is so remarkable that the most incredulous must be convinced.

4. Lastly, with respect to the asserted insemination of other diseases with inoculated smallpox: no instance of the kind has ever been produced. Persons have been inoculated with variolous matter taken from patients afflicted with venereal disease, yet they have received no infection save that of smallpox only.

It would be superfluous to deal with the fallacies involved in these statements: they served to satisfy those who were disposed to be satisfied, and inoculation became the fashion among the scientific and enlightened. Dr. Tronchin, a well-known inoculator, was summoned from Geneva to Paris in 1756 to operate upon the children of the Duke of Orleans, and his success was pronounced decisive. Nevertheless inoculation did not extend beyond people of leisure and culture, and in 1763 an outbreak of smallpox in Paris made an end of the practice. An inquiry was instituted by the authorities, and the evidence left no doubt that the epidemic had been diffused, if it did not originate, with the artificially poxed; and inoculation was thenceforth prohibited in Paris. Any citizen who was resolved to have the induced disease had to retire to country quarters.

Here we may observe that the confidence of the inoculator was grounded on the assumption that whoever had once passed through smallpox, whether natural or artificial, could never again contract the disease. Nevertheless the inoculated did contract the disease, and the disaster was uniformly accounted for as due to some imperfection in the inoculation. There were also instances of smallpox after smallpox, but these, too, were discredited; the first smallpox could not have been smallpox, but chickenpox, measles, or some other eruptive disorder. There was a conspicuous confutation of these evasions in the case of Louis XV. He had smallpox unquestionably in his 14th year, and of unquestionable smallpox he died in 1774 in his 64th year. Notwithstanding, the assertion was perpetuated that there was no possibility of smallpox after smallpox, and it was only when it became necessary to maintain the credit of

vaccination that the facts were admitted; and in this form—Smallpox after vaccination is no more common or extraordinary than smallpox after smallpox—a falsehood on the back of a former falsehood.

We have seen under what safeguards inoculation was practised in Boston, and now we shall turn to Geneva and discover how all the American precautions were set at naught in that city with apparent impunity. The details are from a letter of the Council of Geneva, dated 24th December, 1791, addressed to Dr. Haygarth in answer to his inquiries and suggestions. Des Gouttes, secretary to the Geneva Syndic, wrote—

I.—The Republic of Geneva contains about 35,000 inhabitants, of whom 26,000 dwell in the city, and 9,000 in the adjacent country.

II.—The city is of small extent, and ill adapted to so large a population; and its extension is not easy on account of the fortifications wherewith it is surrounded. There are little more than 1200 houses in the city, which are built in many storeys of many apartments like the ancient part of Edinburgh, each house sheltering on an average twenty-one inhabitants.

III.—A great part of the population consists of strangers, not only because most of our servants and labourers are natives of other countries, but because Geneva being a frontier city, girt about by Savoy, Switzerland, and France, and situated on the highways of intercourse between these states, travellers are always coming and going.

IV.—Notwithstanding this continual resort of strangers within our walls, an epidemic of smallpox is of almost regular occurrence every five years; and between the epidemics it frequently happens that we have no natural smallpox whatever, either in the city or its vicinity.

V.—Inoculation began to be practised here in 1751, since which date we have inoculated a very large number of children annually, and with such marked success that the deaths have but slightly exceeded 1 in 300. Although we have often had to inoculate with pus brought from a distance at times when there was no smallpox to be found in the city, and although children so inoculated have gone freely into the streets, walks, and other public places, before, during, and after the eruption, we have never observed that they were sources of contagion, nor that they produced any intermediate epidemic, nor that they accelerated the return of the periodical epidemic.

VI.—Lastly, our citizens enjoy a republican constitution which requires us to pay most scrupulous regard to the liberty of every individual. No coercive measures to hinder the introduction or

communication of smallpox are here practicable; and we believe we ought to limit our action to advice, and to simple precautions of police, which must not, nor even seem to be, oppressive to the citizens.

This glimpse into old Geneva is not only instructive as concerns inoculation, but it is another exposure of the monstrous fable that represents European cities as decimated with smallpox until Jenner's advent as saviour —a fable that vanishes like smoke whenever brought into contact with matter-of-fact.

Inoculation was introduced to Rome and Florence during a severe epidemic in 1754; and attention being drawn to the remedy, it was discovered that the Italian peasantry had long practised voluntary smallpox just as did the peasantry of Wales and the Highlands of Scotland. In Spain inoculation made little headway: in the words of Moore—

Some inoculations were effected in a few trading cities, which held communication with England; but these efforts were of short duration, and from the distinguished inaction of the Spaniards, inoculation was soon relinquished; and no other country in Europe has suffered so little from smallpox.*

In Holland and Denmark inoculation acquired a certain vogue among the upper classes, and in Germany the like was true to a less extent. In Sweden inoculation was encouraged by the Court, and Dr. Schultz was deputed to visit the London Hospital. His report was so favourable that in 1755 inoculation houses were opened in several parts of the kingdom, and the benefits of the practice were commemorated by a medal in 1757—a curious trophy of illusion under prepossession.

Perhaps the most notable event in the story of inoculation was its introduction into Russia: how it was brought about is thus described by Mr. Morley—

As soon as Catharine came into power (1762), she at once applied herself to make friends in this powerful region [French letters and philosophy]. It was a matter of course that she should begin with the omnipotent monarch at Ferney. Graceful verses from Voltaire

* *The History of the Smallpox.* By James Moore. London, 1815. P. 288.

were as indispensable an ornament to a crowned head as a diadem, and Catharine answered with compliments that were perhaps more sincere than his verses. She wonders how she can repay him for a bundle of books that he had sent to her, and at last bethinks herself that nothing will please the lover of mankind so much as the introduction of inoculation into the great Empire; so she sends for Dr. Dimsdale from England, and submits to the unfamiliar rite in her own sacred person.*

One day in the summer of 1768, at his house in Hertford, Dimsdale received an unexpected message from Pouschin, the Russian minister in London, to wait upon him; and in his presence he learnt that he was required to proceed at once to St. Petersburg to inoculate the Empress. There was of course some hesitation about undertaking so long a journey, but Pouschin had been authorised to overcome all obstacles. What would the Doctor require in the way of expenses? The Doctor discreetly answered that he would leave that to her Imperial Majesty, whereon Pouschin handed him £1000 to pay his way to St. Petersburg. Dimsdale summoned his son from his medical studies in Edinburgh, and the two set off for the North on the 28th of July.

At St. Petersburg Dimsdale was received with every mark of respect and liberal hospitality. He was introduced to the Empress, who was charming and gracious; and he was instructed to make the requisite preparations for the serious duty before him. He had to find pus, and to obtain pus he had to lay hands on a suitable sufferer from smallpox—a task which proved by no means easy. Having discovered a case to his mind, he had then to overcome an obstinate objection to the abstraction of virus. He had, at the same time, to find a couple of healthy young men, who had not had smallpox, on whom to raise secondary virus, for the Empress could not be expected to run the risk of smallpox without mitigation. His first attempt was a complete failure, and he had to report accordingly to his expectant patient. Catharine heard his report with philosophical equanimity, and left

* *Diderot and the Encyclopædists.* By John Morley. Vol. ii. p. 114.

him to try again. At last he was successful, and at the palace of Czarscoe Selo on Saturday, 11th October, 1768, the Empress swallowed five grains of mercurial powder, and late on Sunday evening Dimsdale inoculated her with fluid matter by one puncture in each arm. She did well. From the time of the inoculation to the commencement of the eruption, she walked every day for two or three hours in the open air, and, on the 1st November, she returned to St. Petersburg "in perfect good health, to the great joy of the whole city." * The Grand Duke was inoculated on the 30th October, and by the 22nd November had "perfectly recovered."

The Empress having played, the nobility had to follow suit, and Dimsdale was requested to proceed to Moscow to take them in hand; but at this time there was a new difficulty. There was said to be no smallpox in Moscow, and as Dimsdale could not inoculate without fresh virus, he had to inoculate two girls in St. Petersburg, designing so to time their disorder that he should arrive with them in Moscow in prime condition for business. One girl was a failure, and mishaps and delays on the sledge journey almost made a failure of the other. He did, however, reach Moscow in time enough to communicate the requisite infection to fifty patients, and in Moscow he remained for two months operating and playing the lion. Then he set off for home, and on his route through St. Petersburg found Catharine suffering from pleurisy, for which he bled her, drawing eight ounces of imperial blood. Then came the reckoning. In substantials he had—

£10,000 down;
£2,000 for travelling expenses;
£500 a year for life, to be paid in net English cash, and
A superb gold snuff-box set with diamonds for Mr. Dimsdale.

In honours he had the appointments of—

Counsellor of State;
Physician to her Imperial Majesty; and
Baron of the Russian Empire with descent of title to his eldest son.

* Dimsdale: *Tracts on Inoculation.*

It was a barbarian's style of recompense, paid under the eye of Europe. It cost Catharine nothing, for it is subjects who suffer for the extravagance of despots.

Dimsdale had plans for the systematic inoculation of Russia, but they resulted in little. Catharine's purpose was sufficiently served in the display she had made; and possibly she came to consider Dimsdale an appendage of that deceiver Voltaire, whose busts, that had adorned her saloons and corridors, were by her orders thrown into the cellars when the French revolution opened her eyes to the consequences of French philosophy.

In perusing the literature of inoculation, nothing impresses a reader, enlightened by sanitary science, so much as the manner in which smallpox was regarded as something like hail or lightning that might be averted, but could not be prevented. So far, I have not met with even a hint in that literature that smallpox was either induced by unwholesome modes of life, or that it could be avoided by wholesome modes. In conjunction with this blindness was the amazing assumption of the inoculators, that every one inoculated was to be placed to their credit as saved from smallpox; as if (granting inoculation to be prophylactic) smallpox was ever a universal epidemic, and as if multitudes did not pass through life without smallpox before inoculation was heard of. The true problem to be set and solved in all epidemics, whether of influenza or smallpox, is why some are susceptible and some insusceptible, and whether it is not practicable so to modify conditions as to carry over the susceptible to the ranks of the insusceptible.

CHAPTER IX.

INOCULATION SUPERSEDED AND SUPPRESSED.

THE illusory character of human testimony is graphically illustrated in the case of inoculation. Suppose an inquirer wished to ascertain the ratio of deaths to inoculations, he would be completely bewildered. We have seen what Dr. Buchan wrote—

In the natural way, one in four or five generally dies of smallpox; but by inoculation not one of a thousand. Nay, some can boast of having inoculated ten thousand without the loss of a single patient.

John Birch, an eminent London surgeon, said—

Not one in three hundred dies of inoculation in the general irregular mode of proceeding, and not one in a thousand among observant practitioners; and if the inoculated patient die, he dies of smallpox and of nothing but smallpox.*

In the *Edinburgh Review,* October, 1806, we read—

Of those who have smallpox naturally, one is found to die in six. Of inoculated patients, only one dies in two hundred and fifty. This at least is Dr. Willan's calculation; and we are persuaded that it is very near the truth. In London, where it ought to be best ascertained, some eminent practitioners have stated the proportion to be so high as one in the hundred. The zealous antivaccinists have denied it to be greater, under judicious treatment, than one in a thousand. It cannot be denied, however, that besides the risk to life, the disease, even under the mitigated form, has frequently proved an exciting cause of scrofula and other dreadful distempers, and has often been attended with blindness and deformity.

In Reynolds's *System of Medicine,* it is stated by Marson that—

The Smallpox and Inoculation Hospital was founded in London in 1746, and inoculation was continued there until 1822. Dr. Gregory went carefully over the records of the Hospital for that period of seventy-six years, and found that only three in a thousand died of inoculation. The inoculated disease was usually very mild, but not invariably so.

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* *Serious Reasons for Uniformly Objecting to the Practice of Vaccination.* By John Birch. London, 1806.

Scores of such testimonies might be adduced, twitching the reader from conclusion to conclusion; and in the conflict of authorities what is to be said? It is true that if we select what evidence we like, and call it sound, and reject what we dislike, and call it unsound, we may prove anything; but it is also true, that if we are to be fettered by evidence we shall stand paralysed amid contradictions. When men who are competent, and obviously honest, deliver varying testimony, we are driven to seek some method of reconciliation; and in this matter of Inoculation wherein our resort is to books, and about which we can have no immediate experience, we may derive much light from the corresponding practice of Vaccination. Thus, what is commoner than for vaccinators to assert, that never within their sphere of observation have they witnessed a single case of injury resulting from Vaccination—not one! Subject any dozen ordinary practitioners to judicial examination, and they would thus testify with scarcely a note of variation. On the other hand, take any dozen mothers of families, especially from among the poor, and they would tell of illness, disease, and death following the vaccinators' lancets. The men are more or less competent and honest, and the women likewise, and how shall we account for their variance? In the first place, the men have been drilled from the outset of their profession into the conviction that Vaccination is absolutely harmless, and if any disaster follows, it is coincidence, not consequence. Occasionally a practitioner of more vigorous intelligence than the average, like Mr. Henry May of Birmingham, sees what the mothers see, but does he report accordingly? Not at all. In Mr. May's own words—

> A death from Vaccination occurred not long ago in my practice, and although I had not vaccinated the child, yet in my desire to preserve Vaccination from reproach, I omitted all mention of it from my certificate of death.*

Mr. May recognised the fact and concealed it: a duller

* *Birmingham Medical Review*, January, 1874.

man would have ascribed the death mechanically to erysipelas or pyœmia. Indeed, it is a commonplace with medical men, that no child dies of Vaccination; and hence Vaccination is not an admitted cause of death; and when the fact is insisted upon, there is no limit to the hardihood wherewith the truth is crushed down and covered up. Coroners refuse to hold inquests on children slain by Vaccination, and Dr. Lankester, as coroner for Middlesex, did not hesitate to authorise a false certificate of death in order, like Mr. May, "to preserve Vaccination from reproach." * As for mothers, poor creatures, few of them have minds of their own, and if only they were adequately assured that it was for the good of their offspring that their noses should be slit, they would believe, weep, and submit.

But it will be pointed out that inoculators of the more reasonable sort admitted a certain mortality from the practice. It is so; but the admission was unavoidable. Inoculation communicated smallpox, and there was no evasion of the fact that occasionally the malady assumed a severe form, and the patient died. For such mishaps, however, there were always excuses. The patient was not in a suitable condition of body; he had been eating improperly; he had caught cold; and so on. There remained, nevertheless, the sequelæ of Inoculation, which were just as persistently denied as are those of Vaccination, although there were always clear-sighted observers who maintained that it was impossible to infect the blood with a complex organic virus, and that it should exhaust its effects in a single and definite issue. We all remember how we used to be assured with contemptuous emphasis that it was utterly impossible to communicate Syphilis by Vaccination, and that assertions to the contrary were the fables of ignorance and malice; yet, we see that what was fabulous a few years ago, is now accepted as medical matter-of-fact. Nowhere is scepticism so useful

* The facts are set forth in *Vaccination Tracts*, No. 14, p. 7.

as among physicians; for whenever they protest most, suspect most.

With the close of the 18th Century, Inoculation with smallpox to avert smallpox was accepted as sound practice throughout England. Its safety and efficiency were extolled by medical writers in terms curiously identical with those applied to Vaccination. The objectors were few, and for pious rather than physiological reasons; and the question that exercised practical and benevolent minds was how to universalise the remedy, which, on account of its troublesome accompaniments, was chiefly confined to the upper and middle classes. On this point it may be well to cite the words of Dr. Haygarth of Chester, who, in a letter to the Council of Health of Geneva, dated 10th February, 1792, thus sets forth the position of affairs—

> In Chester, and, I believe, in most of the large towns of England, the casual smallpox is almost constantly present. *All the children of the middle and higher ranks of our citizens are inoculated in early infancy.* The populace, very generally regarding the distemper as inevitable, neither fear nor shun it; but much more frequently by voluntary and intentional intercourse, endeavour to catch the casual infection. All the difficulties of our Smallpox Society in Chester proceeded from this strange delusion and perversity of disposition. With us the smallpox is seldom or never heard of except in the Bills of Mortality; but there its devastation appears dreadful indeed.

The strong objection to Inoculation was, that it diffused the disease generally which it was supposed to avert individually. Inoculators tried to minimise and deny the danger, but in vain; and nothing so contributed to the supersession of the practice by Vaccination as the expectation of escape from the artificially propagated disease. How extensive was that propagation, we leave the writer in the *Edinburgh Review* of 1806 to describe—

> The inoculated smallpox is an infectious disease, and those who take it naturally from an inoculated patient have it as violently as if they had been infected from a case of spontaneous disease; it is to all intents and purposes the natural smallpox again in them. Now, if it be considered that several hundred thousand persons have been annually inoculated in these Kingdoms for the last fifty

years, it will be easy to calculate the immense addition that must have been made in that period to the cases of actual disease, and the increase of natural smallpox that may be supposed to have arisen from this constant multiplication of the sources and centres of infection.

Unless this culture and this traffic in smallpox throughout the United Kingdom be realised, the potent cause of the immediate and extravagant success of Vaccination will be left out of reckoning. When we are harassed, anxious and impatient under some course of conduct, our ears are open to any promise of relief; and it was to a generation so afflicted and so receptive that Jenner in 1798 made his revelation of the virtue of cowpox. No more need, said he, to inoculate with smallpox. Substitute cowpox; and whilst it will protect as effectually, it will inflict no injury and diffuse no infection. The revelation was received with acclamation, and within eighteen months of its delivery (without due experience, and without any warrant that could pass muster in the severe realm of science) the leading physicians and surgeons of London subscribed and published the following manifesto in the newspapers of 1800—

We, the undersigned physicians and surgeons, think it our duty to declare our opinion, that those persons who have had the Cowpox are perfectly secure from the infection of the Smallpox, provided this infection has not been previously communicated.

I do not wish to anticipate the wondrous tale of Jenner—my present purpose is to show how Inoculation was set aside; and it suffices to state that cowpox rapidly made an end of inoculation with smallpox. Indeed, I question whether a revolution in practice was ever effected with similar facility. Within eight years of the delivery of Jenner's revelation, the writer in the *Edinburgh Review* of 1806, already cited, was able to testify—

The bitterest enemies of Vaccination will not deny, that more than nine-tenths of the medical world are decidedly and zealously in favour of it, and that all their demonstrations of its dangers and terrors have been insufficient to convert a single one of their brethren from so damnable and dangerous a heresy. Testimonies, it

may be said, should be weighed, and not numbered; and in this respect the vaccinators, we are afraid, will have a splendid and indisputable triumph. We give the anti-vaccinists all the advantage in our power when we assign to them a few members of the profession in London; for in the country at large, we believe, they have not one respectable practitioner on their side in five hundred. In this great city and school of medicine [Edinburgh] we are assured, they are without a single public adherent.

The resistance to Vaccination was almost entirely confined to the resistance of inoculators, who were too deeply compromised by their own disloyalty to Nature, to make effective resistance. They were steadily borne down by the vaccinators, many of whom had been energetic inoculators, and displayed the usual ardour of apostates in condemning what they had formerly approved. Indeed, when we consider how Inoculation was commended for its efficiency and harmlessness by the same medical authorities who, within a year or two after Jenner's appearance, denounced the practice for its difficulties and dangers, their tergiversation appears little short of shameless. Dr. Lettsom had been an inoculator, yet on 2nd July, 1805, he felt warranted in writing—

What have not the abettors of Variolous Inoculation to answer for? To shoot a dozen or two innocent people in the public streets of London would not be half so injurious as allowing the murderers to kill the rising generation, the future hope of the State. Nothing can show the supineness and ignorance of the Government more than legalising these Variolous Murders.

How far the conquest of the inoculators by the vaccinators had advanced, appeared in a debate in the House of Commons in 1806, when Wilberforce urged that Inoculation should be suppressed, or at least that those who insisted on Inoculation should be compelled to place their patients in quarantine. Mr. Windham admitted the scandal of wretched and miserable subjects of Inoculation being carried about in the streets, but he hesitated to recommend coercive legislation until persuasion had been fully tried and had failed. Dr. Matthews, M.P. for Hereford, took occasion at the same time to run with the hounds. Inoculation, he said, was a

frequent cause of disfigurement and of death in its most awful form; it was a magazine of the most dreadful evils; a magnifier of mortality; and a means of introducing scrofula, a more dangerous and pernicious disorder than smallpox itself—facts which it would have been more creditable to have proclaimed when Inoculation was in fashion. It is so easy to kick when a foe has fallen, and where all are kicking. Human nature is never so despicable as when thus engaged.

The question of restraining Inoculation came again before the House of Commons in 1807, when the practice of inoculating out-patients at the London dispensaries and hospitals was energetically condemned. "I think that the legislature," said Mr. Sturges Bourne, "would be as much justified in taking a measure to prevent this evil by restraint, as a man would be in snatching a firebrand out of the hands of a maniac just as he was going to set fire to a city."

No one was more eager to suppress Inoculation by force than Jenner himself, and in July 1807, he sought an interview with the Premier for the purpose. In a letter to Dr. Lettsom he thus describes his mortification—

> You will be sorry to hear the result of my interview with the Minister, Mr. Perceval. I solicited this honour with the sole view of inquiring whether it was the intention of Government to give a check to the licentious manner in which Smallpox Inoculation is at this time conducted in the metropolis. I instanced the mortality it occasioned in language as forcible as I could utter, and showed him clearly that it was the great source from which the pest of smallpox was disseminated through the country as well as through the town. But, alas! all I said availed nothing, and the speckled monster is still to have the liberty that the Smallpox Hospital, the delusions of Moseley, and the caprices and prejudices of the misguided poor, can possibly give him. I cannot express to you the chagrin and disappointment I felt at this interview.

We are not accustomed to regard politicians of Perceval's order as favourable to liberty; and yet it is refreshing to remark in even the Tories of the Georgian age a jealous regard for the personal freedom of Englishmen, and a hearty contempt for the plausible quacks who were always contriving to circumscribe it. Perceval was

not opposed to Vaccination, but he would not consent to give it an illicit advantage over Inoculation. If it were the good thing it was asserted to be, it might be left to prevail by reason of its own quality.

Under medical and social pressure, the practice of Inoculation at public institutions was gradually abandoned. On 5th May, 1808, the inoculation of out-patients was discontinued at the London Smallpox Hospital, but not until 20th of June, 1822, did the inoculation of in-patients cease. In 1816 the Colleges of Surgeons of London and Dublin pledged themselves against the practice. A formal attempt at coercive legislation, often called for, was at last made by the directors of the National Vaccine Establishment. They framed and promoted a bill, which was introduced to the House of Lords in 1813 by Lord Boringdon, but it was ignominiously withdrawn in 1814—a choice example of grandmotherly legislation. Among its provisions was the enactment that whenever an inoculation took place, the clergyman of the parish should receive notice, and that red flags should be displayed from the house where the patient lay! As Earl Stanhope observed, instead of being a measure of humanity, it would, if passed into law, be one of the most troublesome, inconvenient, and mischievous ever enacted.

In the discussion on this foolish project, Lord Eldon pointed out that the common law was already sufficient to arrest the exposure of sufferers from infectious disease; and acting on the hint the Vaccine Establishment prosecuted a woman, 27th April, 1815, for carrying her inoculated child covered with pustules through the streets of her neighbourhood. Evidence was adduced that she had thus infected eleven persons with smallpox of whom eight had died. The Court of King's Bench pronounced her conduct illegal and criminal, but as it was the first prosecution for such an offence, she was let off with a sentence of three months' imprisonment.

A practice thus banned could not long survive in England, and by and by a medical man who would con-

sent to inoculate became a rarity, or was accounted disreputable. Yet there remained old-fashioned folk who would have nothing to do with cowpox, and insisted on having genuine human pox for their children and grandchildren. Hence Dr. Epps writing in 1831 had to say—

There is a class of medical practitioners who inoculate for the smallpox. Society should utter its voice of moral indignation against such individuals, who glory in anything by which they can claim singularity, or by which they can increase their pecuniary means. Let not society be deceived into any parley with such practices upon the plea, that parents *will* have their children inoculated with the smallpox.*

Gradually the inoculating practitioner ceased, and the practice remained in the hands of "ignorant and unqualified persons, old women, and itinerant quacks;" † and then the end came. An Act of Parliament was passed in 1840 wherein it was enacted that—

Any person who shall produce or attempt to produce in any person by inoculation with variolous matter, or by wilful exposure to variolous matter, or to any matter, article, or thing impregnated with variolous matter, or wilfully by any other means whatsoever produce the disease of smallpox in any person in England, Wales, or Ireland, shall be liable to be proceeded against and convicted summarily before any two or more justices of the peace in petty sessions assembled, and for every such offence shall, upon conviction, be imprisoned in the common gaol or house of correction for any term not exceeding one month.

The Government did not at first intend to make the prohibition absolute, but Mr. Wakley insisted that the time had arrived to suppress the nuisance summarily, and that not a voice would be raised in opposition. Nor was there any opposition. Mr. Goulburn expressed some hesitation, but the House was practically unanimous.

Outside the House few regrets were expressed. Dr. George Gregory, physician of the Smallpox Hospital at St. Pancras, was, however, a man of philosophic turn, and he did not see the old idol cast down unmoved.

On 23rd July, 1840 [he wrote], the practice of inoculation, the introduction of which has conferred immortality on the name of

* *Life of John Walker, M.D.* London, 1831, p. 326.
† Letter of Poor Law Commissioners, 20th August, 1840.

Lady Mary Wortley Montagu, which had been sanctioned by the College of Physicians, which had saved the lives of many kings, queens, and princes, and of thousands of their subjects, during the greater part of the preceding century, was declared illegal by the English Parliament, and all offenders were to be sent to prison, with a good chance of the tread-mill. Such are the reverses of fortune to which all sublunary things are doomed.*

Gregory was not blind to the extravagant claims made for Vaccination, and evidently had a lurking conviction that all was not gain in the substitution of the new practice for the old, saying—

Had not the discovery of Jenner interfered to interrupt its extension and improvement, Inoculation would have continued to this day increasing yearly in popularity. †

Yet was not Inoculation abolished. Sometimes when we get the devil out at the door, he presently re-enters by the window; and thus while Parliament was making an end of Inoculation in one form, it was reviving in another.

It is to be understood that Jenner's cowpox, whatever it might be, was an uncommon and erratic disease, and its discovery and maintenance difficult. To provide a substitute, cows were from time to time inoculated with smallpox, and the resulting virus was used instead of the Jennerian specific. Lest one should be accused of questionable witness, let us refer to Dr. Seaton's *Handbook of Vaccination*. There we read—

Mr. Ceely of Aylesbury in February, 1839, succeeded in inducing vaccine vesicles on two sturks by inoculation with variolous lymph, and in thus establishing lymph-stocks, which passed at once into extensive use, so that, in a few months, more than 2000 children had been vaccinated from them. In December, 1840, Mr. Badcock succeeded in variolating a cow at Brighton, and deriving therefrom a stock of genuine vaccine lymph. In this manner he has raised stocks of vaccine lymph for use on no fewer than thirty-seven separate occasions. The lymph thus obtained by him is now largely employed; it has been supplied to many hundreds of practitioners, and very many thousands of children have been vaccinated with it. Mr. Ceely's experiments were repeated in America in 1852 by Dr. Adams of Waltham, and Dr. Putnam of Boston, who were

* *Lectures on Eruptive Fevers.* London, 1843, p. 39. † *Ib.*, p. 93.

able, it is said, to furnish the city and neighbourhood of Boston with all the vaccine matter used there since that period.

Again, Sir John Cordy Burrows, a surgeon, speaking as a magistrate, at Brighton on 5th February, 1876, observed—

The public seem scarcely to understand what Vaccination means. The vaccine lymph taken from a child is nothing more than what has passed from a smallpox patient through a cow. In 1856-58 I took an active part in inoculating seventeen cows with smallpox, producing in three cases vaccine lymph, and from these the world has been supplied.

Thus, as asserted, has Inoculation been revived, and Jenner's specific set aside. When Dimsdale had Russian nobles to operate upon, he tried to mollify the smallpox by passing it through healthy children. Cows have now taken the place of children, and the virus in its passage from arm to arm may still further be reduced in virulence, when it does not take up fresh malignities such as syphilis; but it is inoculation with smallpox all the same.

CHAPTER X.

AS TO THE PREVALENCE OF SMALLPOX IN THE 18TH CENTURY.

THE exact truth as to the prevalence of smallpox in the 18th Century is not attainable; vital statistics were undeveloped; and in the absence of precision the imaginative revel. M.D.'s and M.P.'s shut their eyes, tilt their noses skyward, and prophesy concerning the frightful ravages, and the salvation wrought by the revered and immortal Jenner. Any extravagance, as to the ravages, or as to the salvation, is accepted as laudable zeal for humanity. "Decimation" is a favourite word in this connection without any sense of its definite meaning. "What family before 1800 ever escaped de-

cimation from smallpox?" asks Dr. Granville. "Smallpox decimated the country in olden times," says Dr. Chavasse; "it ravaged like a plague, whilst Inoculation caused the disease to spread like wild-fire;" adding as a sequence, "Vaccination is an important cause of our increasing population." In the same temper, Lord Chief Justice Cockburn described an unvaccinated infant as "a centre of contagion;" and as the folly of the great is intensified in the little, Mr. Bompas, Q.C., informed the electors of Marylebone, that "a person not vaccinated is like a flaming fire-brand among the people." Thus the infants of last century were "centres of contagion;" the adults were "flaming fire-brands;" whilst England was "decimated" with smallpox diffused like wild-fire by inoculation. What a picture of 18th Century England painted by Rant and illuminated by Delirium!

The tendency of excess on one side is to provoke to excess on the other, but the extravagance of these popular fables ought to put us in love with homely matter-of-fact—wherein indeed is the true extreme of these frantic inventions. What was the extent of smallpox in England last century is the question. With accuracy, we do not know. The common estimates (when not evolved from inner consciousness) are based on the London Bills of Mortality, and when these Bills are scrutinised we find nothing to justify the opinion that the community was harassed and devastated by smallpox over other ailments. In the first place, we have to remark that the exact population of the metropolis was unknown. Some say it was 500,000 in 1701, and others 700,000. In 1751 it was generally reckoned at 750,000, and in 1801 it was said to be 958,863. Then we have to consider that the increase, whatever it might be, lay only partially within the Bills of Mortality, for several rising quarters were outside the boundaries, and there were extensive exemptions within. Thus, so late as 1818, we find Dr. Burrows writing—

The parishes of Marylebone, Pancras, Chelsea, Kensington, and Paddington, now forming an integral part of the metropolis, and

containing a population of 160,000 are not within the Bills of Mortality, and make no returns. Neither are there any returns from St. Paul's Cathedral, Westminster Abbey, the Temple Church, the Rolls and Lincoln's Inn Chapels, the Chapter House, the Tower Church, and various other places of worship of the Established Church. Besides, neither Dissenters, Papists or Jews who have burying places of their own, are included in the Bills. Many of the wealthier classes when they die are removed for interment into the country; nor do they appear in the Bills.

With omissions so serious, the Bills are obviously worth little as registers of the number of deaths in any year in London; and when we inquire how far they may be trusted as indicating the relative prevalence of certain forms of disease, we find them equally questionable. Dr. Burrows thus describes the method by which the causes of death were ascertained—

Diseases as specified in the Bills are a disgrace to the medical science and civilisation in which as a nation we are acknowledged pre-eminent; nor can any effective reform take place while the sources of information are so ignorant and venal as at present. The information as to the disease of which any person dies is collected and verified in the following way.—The Churchwardens of each parish within the Bills of Mortality appoint two old women to the office of Searchers. These women as soon as they hear the knell for the dead, repair to the sexton of the parish to learn the residence of the deceased. They demand admittance into the house to examine the body in order that they may see that there is nothing suspicious about it, and *judge* of what disease the person died; and *they* report to the parish clerk. The regular charge for the performance of this office is 4d. to each Searcher; but if an extra gratuity be tendered, they seldom pass the threshold or hall of the house, and are content with whatever account is given; or should they actually view the corpse, it is easy to imagine what credit is due to the judgment they pronounce.*

In presence of defects so grave as to the number of the dead, and of diagnosis so grotesque as to the causes of death, it would be unwise to argue with any confidence from the data of these Bills; yet, such as they are, we have nothing else to appeal to. The variations of mortality from year to year were of wide irregularity; and whatever influence smallpox might have had, it does not

* "On the Uses and Defects of Parish Registers." By G. M. Burrows, M.D. In *London Medical Repository*, No. 58, October, 1818.

appear to have had much in magnifying the annual totals. Let us take a dozen years when smallpox was heaviest from the last seventy years of the century, and observe its relation to the entire mortality, and to that from fevers—

Year.	Burials from all Diseases.	From Smallpox.	From Fevers.
1736	27,581	3014	3361
1740	30,811	2725	4003
1746	28,157	3236	4187
1749	25,516	2625	4458
1752	20,485	3538	2070
1757	21,313	3296	2564
1762	26,326	2743	3742
1763	26,143	3582	3414
1768	23,639	3028	3596
1772	26,053	3992	3207
1781	20,709	3500	2249
1796	19,288	3548	1547
	296,021	38,827	38,398

Again, let us take twelve years when the death-rate from smallpox was at its lowest. Here they are—

Year.	Burials from all Diseases.	From Smallpox.	From Fevers.
1745	21,296	1206	2690
1750	23,727	1229	4294
1751	21,028	998	3219
1753	19,276	774	2292
1773	21,656	1039	3608
1780	20,517	871	2316
1782	17,918	636	2552
1786	20,454	1210	2981
1788	19,697	1101	2769
1795	21,179	1040	1947
1797	17,014	522	1526
1799	18,134	1111	1784
	241,896	11,737	31,978

We thus see that in twelve years when the death-rate from smallpox was highest, as many died of fevers as of smallpox; and in twelve years when the death-rate from smallpox was lowest, there died thrice as many of fevers as of smallpox. Again, we have to remark, that, on an

average of all the years, smallpox was accountable for something less than a tenth of the total mortality. Also we have to note, that the mortality from smallpox was in great part infant mortality, and that there is reason to believe measles was extensively confounded with smallpox. The infant mortality was prodigious. Rarely a year passed in which a fourth of the deaths was not set down to Convulsions—that is, to babes killed by improper feeding. In 1772 (the worst smallpox year of the century when 3,992 died) there were, 6,605 ascribed to Convulsions, the total mortality being 26,053.

Now I have no wish to minimise the London smallpox of last century, nor even to set 1797, when 522 died, against 1796, when 3548 died. I yield to none in detestation of smallpox as a preventible and therefore disgraceful affliction. Let so much pass for granted; but do not let us in any access of sanitary fury lose alike eyes and reason and rave like maniacs. If smallpox was bad, fevers were worse, and as both had a common origin, why should we make a wanton and unscientific distinction between them?

That smallpox should have been constantly present in London throughout last century was in nowise surprising. The citizens lived in a manner to invite and maintain fevers. I shall refer to their food and drink presently, and would now call attention to the fact that they were a stay-at-home generation almost beyond present-day belief. Cowper did not violate credibility when he sang—

> John Gilpin's spouse said to her dear,
> "Though wedded we have been
> These twice ten tedious years, yet we
> No holiday have seen."

They had no ready means of locomotion, and indeed did not think of fresh air and exercise. An apprentice or maid from the country entered London and was immured as in a prison. We know how the lower orders in our own time huddle together like pigs, unless so far as restrained by lodging-house law, but middle-class

Londoners a century ago utilised their apartments, with more decency perhaps, but with equal ignorance of the virtue of oxygen. The Londoners were a densely compacted community, and at night the streets and lanes of the city were almost as thickly tenanted as a man-of-war, but without benefit of sea-air. A Quaker told me that he served his apprenticeship to a grocer in Cheapside between 1786 and 1793, that the shop was opened at seven in the morning and closed at ten at night, that he slept under the counter, that his ablutions were limited to his countenance, and that he never went out except to meeting on First Days; adding, that he had no sense of being hardly dealt with; it was the custom of the time, and he was as his fellows. Memoirs of the 18th century prove that he spoke the simple truth. Bishop Wilson of Calcutta records that he served in the house of a silk merchant in Milk Street from 1792 to 1797, that he was occupied from six or seven in the morning till eight at night; that there was supper at 8.30, followed by prayers, and that all went to bed at ten. An apprentice in the same house said that he never put on his hat for weeks together, and that more than three years elapsed before his first holiday was granted. William Cobbett in 1783 got into a lawyer's office in Gray's Inn where, he relates, "I worked like a galley slave from five in the morning till eight or nine at night, and sometimes all night long. I never quitted this gloomy recess except on Sundays when I usually took a walk to St. James's Park." Such instances might be multiplied to any extent; and in short it comes to this, that the Londoners of last century lived from year to year *in* their houses, and had no outdoor exercise. If they were careless about air, they were equally careless about light, and, but for the cost of candles, might have disregarded it altogether. Water was chiefly brought from wells or conduits, and was used sparingly; and it is needless to add, there were no water-closets. Even in well-ordered households, stenches were dreadful; and where there were slatterns, the condition of affairs may be faintly imagined. Horrible

cesspools lay behind or beneath most of the houses, evolving pestiferous effluvia. Out of doors, the streets were scarcely less noisome. Rain was the chief scavenger. Swift, in his description of a City Shower, sets before us as graphically as Hogarth, the offices of the rain—

> Now in contiguous drops the flood comes down
> Threatening with deluge this devoted town. . . .
> Now from all parts the swelling kennels flow,
> And bear their trophies with them as they go:
> Filths of all hues and odours seem to tell
> What street they sailed from by their sight and smell.
> They, as each torrent drives with rapid force,
> From Smithfield or St. 'Pulchre's shape their course,
> And in huge confluence joined at Snowhill ridge,
> Fall from the conduit prone to Holborn Bridge.
> Sweepings from butchers' stalls, dung, guts, and blood,
> Drowned puppies, stinking sprats, all drenched in mud,
> Dead cats, and turnip-tops, come tumbling down the flood.

Nor in estimating the sanitary condition of 18th Century London is the influence of the dead on the living to be forgotten. The twenty thousand who died annually remained to poison the survivors. The city grave-yards were places of decomposition rather than of interment, and an odour of corpses pervaded many neighbourhoods. Mr. Samuel Gale wrote in 1736—

> In the church-yard of St. Paul, Covent Garden, the burials are so frequent that the place is not capacious enough to contain decently the crowds of dead, some of whom are not laid above a foot under the loose earth. The cemetery is surrounded every way with close buildings; and an acquaintance of mine, whose apartments look into the churchyard, hath averred to me that the family have often rose in the night-time and been forced to burn frankincense and other perfumes to dissipate and break the contagious vapour. This is an instance of the danger of infection proceeding from the corrupt effluvia of dead bodies.*

Church-goers were subjected to cadaverous influences from the dead in the yard without and from the dead in the vaults below; and pious thoughts acquired an indescribable savour of the sepulchre. Many illnesses originated in church; and families who led wholesome

* Nichols's *Illustrations of Literary History*, vol. iv. p. 499.

lives at home were brought into deadly peril when they turned out on Sundays to public worship.

It is necessary to enter into these details if we would know what manner of people the Londoners were who suffered from smallpox, and what sort of place London was wherein they suffered. Londoners have been taken for the standard of 18th century smallpox, in forgetfulness of the fact that there did not then exist in England a town of a hundred thousand inhabitants—perhaps only two or three of fifty thousand; whilst the rural population bore a far larger proportion to the urban than is the case at this day. In so far as the sanitary conditions of Bristol, Norwich, or York resembled those of London, the analogy between them held good; but to convert the London rate of smallpox into the common rate of England, of Europe, and of the world, and to use the appalling result as a whip of terror wherewith to enforce universal inoculation, and afterwards vaccination, was sheer absurdity, if not something worse.

Whilst smallpox was always present in London, its appearance in the country was irregular and usually epidemic. The Bills of Mortality of towns as large as Northampton were sometimes clear of smallpox for years. Sir Gilbert Blane, in his advocacy of Vaccination *versus* Inoculation, said, that previous to the practice of inoculation there were many parts of the country where smallpox was unknown for periods of twenty, thirty, and even forty years. Mr. Connah, a surgeon of Seaford, Sussex, with a population of 700, informed Dr. Haygarth in 1782, that one person had died of smallpox in Seaford about eleven years before, and he could not ascertain that any other death from the disease had occurred subsequently; and that there was reason to believe that a like immunity prevailed throughout the smaller towns and villages of the southern counties. Wherever we inquire, we are driven to the conclusion that the prevalence and fatality of smallpox in the 18th century were grossly exaggerated by quacks and panicmongers. Nor should we forget in

this connection how Professor Waterhouse, of Boston, an ardent inoculator, had to write in 1787—

> I do not believe there is at present a single person infected by smallpox in all the four New England Governments; that is, not one in a million of people.

What we have to say of London smallpox during last century is, that prevalent as it was, our wonder is that it was not more prevalent; that the disease was bred in the circumstances and habits of the citizens; and that if it were possible to reproduce the same conditions, we should reproduce the same smallpox. On the contrary, say our valiant vaccinators, the same conditions might be reproduced, but if the citizens were universally and efficiently vaccinated and re-vaccinated, there would be no smallpox. Thus we are taught that people may eat and drink as they like, live in darkness, neglect personal cleanliness, take little exercise, breathe air polluted by respiration, filth, and putrefaction, and that whatever disease overtakes them, they will be proof against smallpox. The promise is deceptive, but it was the promise of the inoculator, and it is the promise of the vaccinator; and Dr. Drysdale, describes the practice which warrants the promise as "the greatest triumph of hygienic science —I repeat, by far the greatest triumph of positive hygienic science ever made."*

Some share in the fatality of 18th century smallpox must be charged to the treatment of the disease. What was described as the cool regimen was no secret, yet its practice appears to have been limited to few; whilst with the multitude, patients were confined to close and heated rooms, under heavy bed-clothes, plied with hot drinks, cordials, and alcohol, and kept in foul linen until killed or cured. Frequently, when symptoms of smallpox appeared, bleeding, blistering, and purging were energetically resorted to. If a family of children were affected, they were commonly stowed away in one bed, and their skins would stick together with pus and sweat. It was

* *The Times*, 23rd Oct. and 4th Dec., 1879.

much the same in hospitals and workhouses. "I have seen above forty children," says Dr. Buchan, "cooped up in one apartment, all the while they had this disease, without any of them being admitted to breathe the fresh air." The same course was pursued with other fevers, and the effluvia of the sick-room was overpowering. Take this instance from Jenner's own household. His nephew, Henry, and a maid-servant, were seized with typhus, and Jenner wrote—

> The stench from the poor girl is so great as to fill the house with putrid vapour; and I shall remove Henry this morning, by means of a sedan chair, to an adjacent cottage.*

Indeed, the cleanliness and ventilation we consider so salutary were sedulously avoided. Cold air was accounted specially pernicious, and occasionally when the poor, afflicted with smallpox, were exposed to the weather, astonishment was expressed that recovery instead of death was the issue. It is related in Hutchins's *History of Dorset* that Blandford was burnt down in 1731, and several patients in smallpox were laid under the arches of the bridge as a place of refuge, and, to the general surprise, all got well, although many had died in their beds before the fire. John Birch a London surgeon of high repute, writing in 1814, sums up the case for us on this head in saying—

> I consider the natural smallpox a mild disease, and only rendered malignant by mistakes in nursing, in diet, and in medicine, and by want of cleanliness, which last is the fomes of hospital fevers, and all camp and contagious disorders.
>
> It would hardly be too bold to say, that the fatal treatment of this disease, for two centuries, by warming the chamber, and by stimulating and heating cordials, was the cause of two-thirds of the mortality which ensued.†

We now come to an interesting question. If the reader refers to the list of twelve years of greatest smallpox, and to the list of twelve years of least smallpox in

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* Baron's *Life of Jenner*, vol. i. p. 107.

† *An Appeal to the Public on Vaccination.* By John Birch.

London, it will be observed that the years of least smallpox predominate in the last quarter of the century, and this in spite of the diffusion of the disease by Inoculation. The inoculators when charged with increasing smallpox appealed to the London Bills of Mortality. "Let us," they said, "take the last ninety years of the century, and we shall find that there died in London of smallpox in the thirty years—

From 1711 to 1740 inclusive	...	...	65,383
1741 to 1770	„	...	63,308
1771 to 1800	„	...	57,268

Here we see, that the number of deaths was greater in the first thirty years by 2075 than in the second thirty years during which Inoculation had acquired some stability, and greater by 8115 than in the last thirty years, during which Inoculation was the established practice of most prudent families.* We are therefore unjustly accused. These figures leave no doubt that smallpox is decreasing, and we claim that the decrease is due to our practice."

The decrease was certain, but I cannot allow that it was due to Inoculation; on the contrary I assume that the decrease would have been greater but for the culture of the disease by the inoculators. The fact is extremely distressing to the more rabid vaccinators, and Dr. Corfield tries to curse it out of existence as "the falsest of falsehoods;" but there it abides. It is hard for those who represent Jenner as the saviour of mankind from smallpox to have it shown that Londoners, at least, were in process of salvation before his intervention; but facts, alas! are cruelly unkind to theorists, sentimentalists, and quacks of all sorts. In the words of Dr. Farr—

Smallpox attained its maximum mortality after Inoculation was introduced. The annual deaths from smallpox from 1760 to 1779 were on an average 2323. In the next twenty years, 1780 to 1799 they declined to 1740. The disease, therefore, began to grow less

* Dr. Adams in *Medical Journal*, 1810, p. 31. Dr. Gregory in his treatise on *Eruptive Fevers*, 1843, cites and endorses this argument.

fatal before Vaccination was discovered; indicating, together with the diminution of fevers, the general improvement of health then taking place." *

The decrease of smallpox towards the close of the century, says Dr. Farr, was due to "the general improvement of health then taking place;" but to what was that improvement due? No marked improvement had been effected in the sanitary arrangements of London—why then this change for the better? My answer is, that a great alteration was in progress in the popular diet.

Dr. George Cheyne, in his famous *Essay of Health and Long Life*, published in 1724, says—

There is no chronical distemper whatsoever more universal, more obstinate, and more fatal in Britain, than the Scurvy taken in its general extent.

And more than fifty years afterwards, in 1783, we have Dr. Buchan bearing similar testimony—

The disease most common to this country is the Scurvy. One finds a dash of it in almost every family, and in some the taint is very deep.

It is scarcely necessary to cite authority for what was so generally known and confessed; but in this question of smallpox and its prevention we have to deal with many who appear to be destitute of any historic sense; who argue as if what Englishmen are to-day, they always were; and who contend that as there was more smallpox in London before Jenner than since Jenner, therefore Jenner must be the cause of the diminution. It is necessary to condescend to such feeble folk.

The cause of the general scorbutic habit of the people was widely recognised by medical men, and Buchan merely repeated their common opinion in saying—

A disease so general must have a general cause, and there is none so obvious as the great quantity of animal food devoured by the natives of this island. As a proof that Scurvy arises from this

* Article, "Vital Statistics: Epidemics," in M'Culloch's *Statistical Account of the British Empire.*

cause, we are in possession of no remedy for that disease equal to the free use of vegetables.*

Cheyne said much the same at the earlier date. He complained that the upper classes gorged themselves with animal food, and slaked their thirst with wine, "which is now [1724] become common as water, and the better sort scarce ever dilute their food with any other liquor." Beer had the place of wine among the middle and lower orders. In the words of Buchan—

> The English labourer lives chiefly on bread, which being accompanied with other dry, and often salt food, fires his blood and excites an unquenchable thirst, so that his perpetual cry is for drink.

He adds—

> If men will live on dry bread, poor cheese, salt butter, broiled bacon, and such like parching food, they *will* find their way to the alehouse—the bane of the lower orders, and the source of half the beggary in the nation.

Were we to say that the diet of the English for the greater part of last century consisted of Bread, Beef, and Beer, we should not go far wrong. The London bread was then, as now, poor stuff; "spoiled," says Buchan, "to please the eye, artificially whitened, yet what most prefer, and the poorer sort will eat no other." Whenever it could be obtained, beer was the beverage that went with bread, and was drank by young and old. Salt beef and mutton, bacon, salt fish, and butchers' offal completed the dietary of the multitude. The feeding of the poor in hard seasons exercised the beneficent severely, for the baker's bill often went far to exhaust the working-man's earnings.

It was easy to recommend the rich to get rid of their scurvy by a resort to vegetable food, but to the poor with their obstinate prejudices, shiftlessness, and ignorance, such a recommendation was a sort of mockery. Deliverance, however, came in a form recommended by pleasantness and economy, namely, in the potato. It is true the tuber had been known long before, but not as

* *Domestic Medicine.* Chap. lvi. Concerning the Diet of the Common People.

an article of free and ordinary consumption. Toward the middle of the century it was discovered that potatoes could be grown cheaply in large quantities, and supply and demand developed together. Women and children especially rejoiced in the new food, whilst the benevolent exulted in the liberal accession to the poor man's fare. It became a point of duty with Lord and Lady Bountiful to recommend the culture and consumption of potatoes everywhere; and to see how far the substitution of potatoes for bread had extended early in the nineteenth century, we need only refer to the pages of Cobbett, who denounced the change with unwearied virulence as a degradation of humanity. Certainly potatoes are inferior to bread in nutritive value, but in food we have to look for more than mere nutriment; and the general use of the potato went far to purify and ameliorate the blood of the English people.

The appearance of the potato as a cheap constituent of common fare, was an argument wherewith Jenner endeavoured to allay apprehensions, that, having stopped smallpox, there would soon be more mouths than food to fill them. To Dunning he wrote, 10th February, 1805—

> I have often urged the following argument when too numerous a population has been thrown in my teeth, as one of the ill effects likely to attend vaccination. Who would have thought a century ago, that providence had in store for us that nutritious and excellent vegetable, the potato—that ready made loaf, as it were, which is prepared in higher perfection in the garden of the cottager than in the highly manured soil of the man of opulence.

And again to Worthington, 25th April, 1810—

> What a gift from Heaven was this extraordinary vegetable—a ready made loaf; reserved, too, till the hour when population, in these realms at least, began first to increase; and then coming we scarcely know how. Away with Malthus and his dreary speculations! The skies are filled with benevolence, and let population increase how it may, let us not distrust and suppose that men will ever pick the bones of each other.*

Nor was the change in the people's diet limited to the introduction of the potato; with it came tea. Of course

* Baron's *Life of Jenner*, vol. ii. pp. 348 and 410.

we know that tea was drank in England long ere George III. was King, but it was in his days that tea came into popular use. Here again we may refer to Buchan, who was strongly opposed to the innovation. He wrote—

> It is said the inhabitants of Great Britain consume more tea than all the other nations of Europe together. The higher ranks use tea as a luxury, while the lower orders make a diet of it. The lowest woman in England must have her tea, and the children generally share it with her. The mischiefs occasioned by tea arise chiefly from its being substituted for solid food, and had I time to spare, I think it could not be better employed than in writing against the destructive drug. Its use will induce a total change in the constitutions of the people of this country. Indeed, it has gone a great way towards effecting that evil already.

What Buchan had not time to do, Cobbett subsequently did, and some of his most racy patches of vituperation were applied to tea and tea-drinkers. In Bacon, Bread and Beer, according to Cobbett, consisted the strength of the English working-man, whilst tea and potatoes he held in abomination.

To this partial substitution of potatoes and tea for salted animal food and malt liquor, we may justly attribute the reduction of the scorbutic habit of the people, and that improvement of health which were coincident with the close of last century and were continued into the present. What every student of vital statistics has to remember is, that conditions have to be identical to yield identical results. The lives of the majority of the English people last century, and notably so in London, were hard and sordid to a degree which in these times is difficult to realise. Their sanitary conditions have been indicated, and I would now enforce the observation, that they were ill fed and insufficiently fed; consequently their diseases were malignant, and smallpox not unfrequently scarred deeply its scorbutic victims. Wherefore to run a parallel between the Londoners of the 18th century and the English of the 19th in the matter of smallpox, and to ascribe any difference between them to Jenner's specific, is to display ignorance that is inexcusable, or craft unscrupulous.

PART II.—VACCINATION.

CHAPTER I.

JENNER'S EARLIER YEARS.

THE competent biographer, it is said, must be an admirer of his subject, for only so far as he sympathises can he understand. *Tout comprendre c'est tout pardonner.* But I neither propose to write a Life of Jenner, nor do I believe it essential to insight to sympathise where compelled to reprobate. In Jenner's case we have to deal with an accident rather than with a vigorous personification of evil. It was his fate to have a happy (or unhappy) thought, adapted to the humour and practice of his time, which was immediately caught up and carried to world-wide issues. In himself, he was as ordinary a character as was ever thrust into greatness. For the mischief of his thought, some of his contemporaries were as responsible as himself—some, indeed, more blameworthy. With Bishop Butler I may ask, "Why may not whole communities be seized with fits of insanity, as well as individuals?" and with him aver, "Nothing else can account for a great part of what we read in history." The common mind passes at times into unwholesome conditions, wherein the words of Paul are exemplified, "For this cause shall God send them a strong delusion, that they should believe a lie."

Edward Jenner, the son of a clergyman, was born at Berkeley, Gloucestershire, on 17th May, 1749. After the usual education of a youth of his class, he was apprenticed to Mr. Ludlow, surgeon and apothecary, of Sodbury, near Bristol; and on the completion of his time (1770) was sent to London, where he resided for two years with Dr. John Hunter, who increased his

means for scientific inquiry by the reception of pupils, caring much more for his menagerie at Brompton than for patients, and utilising his pupils as assistants in his researches. Captain Cook returned from his first voyage of discovery in 1771, and his collection of specimens of natural history was assigned to Hunter for arrangement, who set Jenner to work upon them; and, it is said, he did his duty so well that he was offered the appointment of naturalist in Cook's next expedition. Jenner was, however, eager to commence business as country surgeon, and in 1772, at the age of 23, he returned to his native vale, legally qualified by his experience at Sodbury, and his two years with Hunter, to practise at discretion on the good folk of Berkeley.

It may be said that Jenner's was a poor sort of training for a medical man, but it is to be questioned if he lost much by his ignorance; for a century ago medical knowledge was largely absurdity, and practice mischief; and he did best who stood most frequently helpless in the presence of Nature. Sir Benjamin Brodie relates how he served when a young man with a general practitioner near Leicester Square—

> His treatment of disease seemed to be very simple. He had in his shop five large bottles, which were labelled *Mistura Salina*, *Mistura Cathartica*, *Mistura Astringens*, *Mistura Cinchonæ*, and another, of which I forget the name, but it was some kind of white emulsion for coughs; and it seemed to me that out of these five bottles he prescribed for two-thirds of his patients. I do not, however, set this down to his discredit; for I have observed that while young members of the medical profession generally deal in a great variety of remedies, they commonly discard the greater number of them as they grow older, until at last their treatment of diseases becomes almost as simple as that of my Æsculapius of Little Newport Street.*

Hunter's name is often used as a sort of consecration of Jenner, but for no obvious reason. Hunter confirmed, if he did not beget in Jenner a strong liking for natural history; and when Jenner was settled in the country, he often availed himself of his services as observer and

* *Autobiography of Sir B. C. Brodie*, p. 38.

collector, writing to him for information about the habits of the cuckoo, the breeding of toads and frogs, and the sexes of eels; for cuckoos' stomachs, crows and magpies' nests, for bats, hedgehogs, blackbirds, lizards, hares, and fossils; for a cock salmon, for salmon spawn and fry, for a large porpoise, "for love or money;" for the arm of a certain patient when he dies; suggesting horrible experiments on hedgehogs, bats, and dogs, and describing one of special atrocity upon an ass. The most serious proposition in their correspondence was that Jenner should come to London as a teacher of natural history, but Hunter threw out the suggestion with hesitation, the qualification for the appointment being 1000 guineas down. Jenner had improved, or supposed he had improved, the preparation of tartar emetic, and Hunter wrote—

DEAR JENNER,—I am puffing off your tartar as the tartar of all tartars, and have given it to several physicians to make a trial of, but as yet have had no account of their success. Had you not better let a bookseller have it to sell, as Glass of Oxford did his magnesia? Let it be called Jenner's Tartar Emetic, or anybody's else you please.

Hunter died in 1793, and there is no evidence that Jenner submitted to his judgment the question of Vaccination, if even we allow that prior to that date the project had occurred to Jenner himself. It is certain that he mentioned to Hunter that country folk believed that to catch cowpox was to be secure from smallpox, and that Hunter repeated the fact in his conversation and lectures; but there is no reference to the matter in Hunter's writing and correspondence.

It is the habit of Jenner's admirers to represent him as a patient investigator to whom a great thought dawned in boyhood, which was brought forth in the maturity of life. In conformity with this legend, it is related that when an apprentice at Sodbury, a young woman came to his master's surgery, and smallpox being mentioned, she said, "I cannot take that disease, for I have had cowpox;"

and her observation was pondered in his heart; whereon Dr. Baron, his biographer, ecstatically launches forth—

> Newton had unfolded his doctrine of light and colours before he was twenty: Bacon wrote his *Temporis Partus Maximus* before he attained that age: Montesquieu had sketched his *Spirit of Laws* at an equally early period of life: and Jenner, when he was still younger, contemplated the possibility of removing from among the list of human diseases one of the most mortal that ever scourged our race. The hope of doing this great good never deserted him, though he met with many discouragements; his notions having been treated with scorn and ridicule by some, and with indifference by almost all.

Against such a paragraph we may write, Sheer romance! Jenner was by no means reticent, and that the prevention of smallpox was for any length of time the burden of his soul, nowhere appears. The romance came into being after date in order to make much of little, and to justify payment in cash and reputation. For, taking Vaccination at the utmost, it was a slight advance upon existent knowledge and practice. In the first place, it was a notorious belief in many dairy districts, that to contract cowpox was equivalent to smallpox in averting a subsequent attack of smallpox. In the second place, inoculation with smallpox was the custom of the time; and if infection with cowpox prevented smallpox, why should not inoculation with cowpox do so as effectually as inoculation with smallpox? The intelligence requisite to reach a conclusion so obvious was not great, and therefore it was no cause for surprise that when Jenner's claim as originator of Vaccination was brought forward, his priority should be disputed from several quarters; as by Benjamin Jesty of Yetminster, who inoculated his wife and sons with cowpox in 1774; by Nash of Shaftesbury; Mrs. Rendall, and others. Jenner was not insensible to the force of these claims, but evaded them under the plea that there was cowpox *and* cowpox, and that he had discovered and defined the right sort.

In parts of Holstein, too, cowpox was regarded as good against smallpox, and on more than one occasion was deliberately employed for the purpose. Plett, a village

schoolmaster, near Kiel, inoculated three children with the disease in 1791, who were afterwards credited with resisting variolous infection in consequence of their vaccination.*

How thoroughly the asserted prophylaxy of cowpox was known, Jenner himself was accustomed to bear witness. He was a member of two clubs, the Medico-Convivial which met at Rodborough, and the Convivio-Medical which met at Alveston; and he used to bring cowpox so persistently under discussion, that, he said, he was threatened with expulsion if he did not desist. "We know," said the jovial doctors, "that an attack of cowpox is reputed to prevent smallpox, but we know that it does not, and that should end the matter."†

In pursuance of the tactics that would represent Vaccination as the outcome of the labour of many years, we have the following extraordinary narrative from Baron, Jenner's biographer—

> It was not till 1780 that Jenner was enabled, after much study and inquiry, to unravel many of the perplexing obscurities and contradictions with which the question of cowpox was enveloped, and which had impressed those who knew the traditions of the country with the opinion that it defied all accurate and satisfactory elucidation. In the month of May of the year just mentioned, 1780, he first disclosed his hopes and his fears, respecting the great object of his pursuit, to his friend Edward Gardner. By this time *Jenner's mind had caught a glimpse of the reputation which awaited him*, but it was still clouded by doubts and difficulties. He then seemed to feel that it might, in God's good providence, *be his lot to stand between the living and the dead, and that through him a plague might be stayed.* On the other side, the dread of disappointment, and the probability of failing to accomplish his purpose, restrained that eagerness which otherwise would have prompted him prematurely to publish the result of his inquiries, and thereby, probably, by conveying insufficient knowledge, blight forever his favourite hope.‡

Many are the marvellous relations in ancient and modern history, but in the records of the supernatural it is questionable if there be anything to match the pre-

* Simon's *Papers on Vaccination*, p. xii.
† Baron's *Life of Jenner*, vol. i. pp. 48 and 126. ‡ *Ib.*, vol. i. p. 127.

ceding. Painters depict the runaway apprentice listening on Highgate Hill to the bells as they pealed, "Turn again Whittington, twice Lord Mayor of London," but they might find a finer subject in the young Gloucestershire surgeon, aged 31, habited "in blue coat and yellow buttons, buckskins, well polished jockey boots with handsome silver spurs, a smart whip with silver handle, and hair done up in a club under a broad-brimmed hat,"* with eye fixed in vision, contemplating his glorious destiny, through clouds of doubt and difficulty, full twenty years ahead; standing like another Aaron, censer in hand, between the living and the dead until the plague was stayed! Verily, if we do not see miracles, it is because we do not choose to look for them.

The chapter of the wonderful is not exhausted; yet greater things remain. Says Baron, and recollect the year was 1780 and Jenner aged 31—

Jenner was riding with Gardner, on the road between Gloucester and Bristol, near Newport, when the conversation passed of which I have made mention. He went over the natural history of cowpox; stated his opinion as to the origin of this affection from the heel of the horse; specified the different sorts of disease which attacked the milkers when they handled infected cows; dwelt upon the variety which afforded protection against smallpox; and with deep and anxious emotion mentioned his hope of being able to propagate that variety from one human being to another, till he had disseminated the practice all over the globe, to the total extinction of smallpox"—

Which is to say, that in 1780, Jenner, aged 31, had arrived at the conclusion which he offered to the world in 1798 at the mature age of 49; and in the meanwhile allowed mankind to perish from smallpox, he having their salvation in his hands!

The miraculous conversation, says Baron, was concluded by Jenner in words to the following effect—

Gardner, I have entrusted a most important matter to you, which I firmly believe will prove of essential benefit to the human race. I know you, and should not wish what I have stated to be

* Thus described by Gardner. Baron's *Life of Jenner*, p. 15.

brought into conversation; for should anything untoward turn up in my experiments I should be made, particularly by my medical brethren, the subject of ridicule—for I am the mark they all shoot at.*

Gardner, Jenner's friend, who played the part of *alter ego* in the asseveration of an early date for Vaccination, was a dealer in wines and spirits. Charity believeth all things, but even charity would exhibit a sceptical countenance when what it is a man's interest to prove and have placed to his credit, is in itself improbable; which, if true, might be proved by documents and witnesses; but which is merely supported by his own word and that of a friend. Let me repeat, there was never a vestige of evidence adduced for the revelations of 1780 beyond the bare assertions of Jenner and Gardner; and further, that they are radically at variance with the tenor and dates of Jenner's first publication—*The Inquiry* of 1798.

The next date to which we come is 1787, in which year Jenner is represented as having taken his nephew, George, into a stable to look at a horse with diseased heels—

"There," said he, pointing to the horse's heels, "is the source of smallpox. I have much to say on that subject, which I hope in due time to give to the world."†

Baron gives no authority for this anecdote. It is probably ante-dated six or seven years.

In 1788 Jenner married Catherine Kingscote. In his domestic relations, he was devotedly affectionate, even uxorious; ready to defer any duty and to surrender any advantage to the pleasures of home.

As the phrase ran, Jenner was a good hand at a "copy of verses," and one of these, "Signs of Rain," commencing—

> The hollow winds begin to blow,
> The clouds look black, the glass is low—

has a place in nearly all poetical collections.

In 1792 Jenner applied to the University of St.

* Baron's *Life of Jenner*, vol. i., pp. 127-129.
† *Ibid.*, p. 135.

Andrews for the degree of Doctor of Physic. It cost £15, and nothing more.

Hunter used to say to speculative pupils, "Don't *think*, but *try;* be patient, be accurate;" and Jenner, in relation to cowpox, required the advice; for, by his own account, he was content to *think* of cowpox for at least a quarter of a century, whilst he knew by intuition its true origin, its magical efficacy, and future triumph without any *trial.* His first experiment was made in November, 1789, upon his son Edward, his first-born, an infant of eighteen months.

"He was inoculated with cowpox?"

O, no!

"Then with grease from a horse's heel?"

Not at all!

"With what then?"

Why, with swinepox; and it answered!

The child sickened on the eighth day; a few pustules appeared; they were late and slow in their progress, and small, but they proved sufficient. The poor child was then put through what was styled the Variolous Test: not once or twice, but five or six times at various intervals, he was inoculated with smallpox without other obvious effect than local inflammation and erysipelas. Nothing ever claimed for cowpox turned out more satisfactorily than this experiment with swinepox—supposing we trust Jenner.

Arguing from the records (and we have nothing else to argue from) it was not until about 1795 that Jenner turned his attention with serious purpose to cowpox. This Baron allows, saying—

> Many years elapsed before Jenner had an opportunity of completing his projected experiments in Vaccination, and he encountered numerous difficulties in carrying on the preliminary part of his inquiry.*

But Baron fails to specify what were the projected experiments, or the difficulties which hindered their

* Baron's *Life of Jenner*, vol. i., p. 131.

performance. It is a common nuisance in "sympathetic" biographies to have unlimited drafts made upon one's credulity. The evidence of example would go to prove that Jenner placed his trust in swinepox rather than cowpox, at least as late as 1789.

In April, 1795, a general inoculation took place at Berkeley on Dimsdale's plan; that is to say, all in the district who had not had smallpox were inoculated with the disease, so that they might sicken together and do no mischief. Among the Berkeleyans was one Joseph Merret, who, 1770, had attended horses with greasy heels and at the same time milked cows, and from the cows had contracted cowpox. Jenner inoculated him repeatedly with smallpox on this occasion, but with no effect; whence he concluded that the attack of cowpox in 1770 had maintained Merret secure from smallpox for five-and-twenty years.*

Jenner's aim was now directed to demonstrate that the common faith in cowpox as a defence against smallpox was well-founded; and to do so it was necessary to clear away two objections—

FIRST, That some who had caught cowpox had subsequently suffered smallpox.

To which he answered—

Various eruptions occur on the teats of cows, which are confounded with cowpox, and infect the milkers; and these, I admit, do not protect from smallpox.

In a letter to Edward Gardner in 1798 he remarked—

> The *true* has many imitations by the *false* on the cow's udder and nipples; and all is called *cowpox* whether on the cow or communicated to the human.†

SECOND, That some who had contracted true cowpox had nevertheless fallen victims to smallpox.

To which he answered—

Admitted: but then the milker had not received in-

* Jenner's *Inquiry*, case i., p. 9.
† Baron's *Life of Jenner*, vol. i., p. 297.

fection from the cow at the proper time, but at a stage of the eruption too early or too late.

If the reader will set these points clearly before him, he will have the measure of Jenner's claim. It was a claim to define the truth there was in a popular belief—not to make an independent discovery.

Jenner at this juncture had staked his hope on the identification of horsegrease with cowpox. Yet even in this identification he does not seem to have been original.

It was a persuasion among the farmers that pox on the cows was derived from grease on the horse; and that infection with horsegrease was just as good against smallpox as infection with its derivative cowpox. The fact, however, of this derivation of cowpox from horsegrease was contested, but Jenner was positive. Writing in 1794 he said—

> At our last meeting our friend treated my discovery of the origin of cowpox as chimerical. Farther investigation has convinced me of the truth of my assertion beyond the possibility of a denial.*

Challenged to produce direct evidence that grease from the horse produced pox in the cow, he met with considerable difficulty, so that on 2nd August, 1797, he had to write—

> The simple experiment of applying the matter from the heel of the horse, in its proper state, to the nipples of the cows, when they are in a proper state to be infected by it, is not so easily made as at first sight may be imagined. After waiting with impatience for months in my own neighbourhood, without effect, I sent a messenger to Bristol, in vain, to procure the true virus. I even procured a young horse, kept him constantly in the stable, and fed him with beans in order to make his heels swell, but to no purpose. †

In the matter of horsegrease, it is to be observed as Dr. Mason Good informs us, "that for ages blacksmiths and farriers, who had been infected with grease, were considered as generally insusceptible of variolous contagion." ‡ Wherefore, to Jenner is not to be ascribed the discovery of horsegrease as good against smallpox;

* Baron's *Life of Jenner*, vol. i, p. 136. † *Ibid.* p. 141.
‡ *Study of Medicine*, vol. iii. p. 59, 3rd ed. London, 1829.

but merely that he held with certain farmers that it was the cause of cowpox, and one in constitution with cowpox; and thus endeavoured to combine the tradition of the stable with that of the dairy.

It was not until 1796 that Jenner made any experiment with cowpox—up to that date, whatever his visions, he was in Hunter's phrase a *thinker*, not a *trier*. On 14th May of that year, he took matter from the hand of Sarah Nelmes, who had been infected by her master's cows, and inserted it by two incisions in the arm of James Phipps, a child of eight years of age. The boy went through the disease in a regular manner, and on the 1st July was inoculated with smallpox without effect, to Jenner's intense satisfaction. He communicated the event to Gardner in the following letter—

BERKELEY, 19th July, 1796.

DEAR GARDNER,—As I promised to let you know how I proceeded in my inquiry into the nature of that singular disease the Cowpox, and being fully satisfied how much you feel interested in its success, you will be gratified in hearing that I have at length accomplished what I have been so long waiting for, the passing of the Vaccine Virus from one human being to another by the ordinary mode of inoculation.

A boy of the name of Phipps was inoculated in the arm from the pustule on the hand of a young woman who was infected by her master's cows. Having never seen the disease but in its casual way before, that is when communicated from the cow to the hand of the milker, I was astonished at the close resemblance of the pustules, in some of their stages, to the variolous pustules.

But now listen to the most delightful part of my story. The boy has since been inoculated for the smallpox, which, as I ventured to predict, produced no effect. I shall now pursue my experiments with redoubled ardour.

But the experiments could *not* be pursued, for, from July, 1796 till the spring of 1798, Cowpox disappeared from the dairies around Berkeley, and, as we have seen, horsegrease was also unattainable. Jenner had, however, resolved on publication. Life was advancing; he had made no mark in the world; and, as he wrote to Gardner—

Added to all my other cares, I am touched hard with the reigning epidemic—Impecuniosity.

At first he proposed to embody his views in a paper for the Royal Society, but on second thoughts determined to issue a pamphlet. Having read his manuscript to Dr. Worthington, Mr. Paytherus, and Mr. H. Hicks, assembled round the table of Mr. Thomas Westfaling, at Rudhall, near Ross, Herefordshire, and having secured their approval, the matter was put to press, and about the end of June, 1798, appeared—

AN

INQUIRY

INTO

THE CAUSES AND EFFECTS

OF THE

VARIOLÆ VACCINÆ,

A DISEASE

DISCOVERED IN SOME OF THE WESTERN COUNTIES OF ENGLAND, PARTICULARLY

GLOUCESTERSHIRE,

AND KNOWN BY THE NAME OF

THE COW POX.

CHAPTER II.

JENNER'S *INQUIRY*, 1798.

The curious tradition among the dairy folk of Gloucestershire, that persons who had suffered from Cowpox were thereby rendered insusceptible of Smallpox, was made known to Edward Jenner when a doctor's apprentice, *and was never afterwards absent from his mind.* Thirty years elapsed before the fruit was borne to the public; *but incessantly he thought, and watched, and experimented on the subject,* and the work in which at length he recorded the incomparable results of his labour may well have commanded the confidence of reflecting persons.

Little would ever be heard of objections to Vaccination, if all who undertake the responsibility of its performance, and all who feel disposed to resist its adoption, *would but thoroughly study that masterpiece of medical induction,* and imitate the patience and caution and modesty with which Jenner laid the foundations of every statement he advanced.

In the first *Inquiry into the Causes and Effects of the Variolæ Vaccinæ*, Jenner set on a scientific basis the popular belief to which I have referred; and the close of the 18th Century, which had much to darken it, will be remembered till the end of human history for the greatest physical good ever yet given by science to the world.—*Papers relating to the History and Practice of Vaccination.* Pp. xi. and xii. London, 1857.

THESE are the words of Mr. John Simon, and in them we have the Jennerian legend with the morsel of fact to the mass of fable which characterises legendary matter, ancient and modern. The recommendation to "study thoroughly that master-piece of medical induction," Jenner's *Inquiry,* is a mere flourish of panegyric; for, as Mr. Simon was well aware, the book had been out of print for half a century, and was practically inaccessible; whilst its reproduction has usually been considered undesirable in the interests of Vaccination, inasmuch as it reveals more than is expedient for common knowledge. An idol that is good to swear by is always fortified by a convenient obscurity.

The *Inquiry* is a quarto of less than seventy pages in large type, set in broad margins in the grand style of the

period, and illustrated with four coloured plates. There are eight pages of Introductory Matter, followed by thirty-four pages of Cases, concluding with twenty-six pages of General Observations.

It is to the Cases as the ground of the argument, that I would first direct attention. They are twenty-three, and may be thus assorted—

13 of Cowpox communicated by accident.
4 of Horsegrease communicated by accident and inoculated by design.
6 of Cowpox inoculated by design or transferred from arm-to-arm.

It may be tedious, but I should like to go with the reader over these Cases, for they are highly instructive. Let us take the first twelve of Cowpox communicated by accident.

I.—Joseph Merret, Gardener.

In 1770 attended to Horses, milked Cows, and caught Cowpox. Afterwards his family had Smallpox, but he escaped. In 1795 Jenner repeatedly inoculated him with Smallpox without effect.

II.—Sarah Portlock, Farm Servant.

In 1771 had Cowpox. In 1792 nursed her child in Smallpox "conceiving herself secure," and was at the same time inoculated with Smallpox in both arms without effect.

III.—John Phillips, Tradesman.

Had Cowpox when nine years old. Was inoculated with Smallpox by Jenner at the age of 62 without effect.

IV.—Mary Barge, Farm Servant.

In 1767 had Cowpox. In 1791 was inoculated with Smallpox without effect. Had also acted as nurse to Smallpox patients without catching the disease.

V.—Mrs. H——, Gentlewoman.

Had Cowpox when very young, contracted by handling dairy utensils. Was subsequently exposed to Smallpox, "where it was scarcely possible for her to have escaped;" and in 1778 was inoculated with Smallpox by Jenner without effect.

At this point, I would draw attention to the ages of the persons set forth in these Cases: they were past middle life when the susceptibility to Smallpox was either low or extinct. The reason given by Jenner for their production was that he "wished to show that the change produced in the constitution by Cowpox is not affected by time"—a claim which vaccinators at this day surrender, insisting on the necessity of re-vaccination to maintain "the benign influence;" but apart from that consideration, there was nothing extraordinary in resistance to inoculated Smallpox. Without the intervention of Cowpox, inoculators were constantly meeting patients who would not "take," even with repeated attempts, and especially among elderly people; and some who obstinately resisted inoculated Smallpox, subsequently contracted the disease in the ordinary way. So much Jenner himself allowed, saying—

> There are many who from some peculiarity in habit resist the common effects of variolous matter inserted into the skin, and in consequence are haunted through life with the distressing idea of being insecure from subsequent infection. (P. 60.)

Yet he was pleased to refer this well recognised resistance to variolation in those who had had Cowpox to Cowpox, allowing nothing for habit of body!

VI.—Sarah Wynne, Dairymaid.

In 1796 had Cowpox in May, and "in so violent a degree, that she was confined to her bed, and rendered incapable for several days of pursuing her ordinary vocation." On 28th March, 1797, she was inoculated with Smallpox by Jenner without effect.

Under this Case Jenner observes, that "among our dairy farmers those who have had Smallpox either escape Cowpox, or are disposed to have it slightly; and as soon as the complaint shows itself among cattle, assistants are procured, if possible, who are thus rendered less susceptible of it, otherwise the business of the farm could scarcely go forward." At the farm where Sarah Wynne was employed, all had had Smallpox except Sarah, and all save Sarah, escaped.

VII.—William Rodway, Dairyman.

In 1796 had Cowpox. In 1797 was inoculated with Smallpox by Jenner without effect.

Under Rodway's Case Jenner showed that the farmers were at fault in supposing that Smallpox kept off Cowpox. In the dairy where Rodway was employed, all the milkers had passed through Smallpox, except Rodway, and all contracted Cowpox; "but there was no comparison in the severity of the disease as it was felt by them and by Rodway. While he was confined to bed, they were able, without much inconvenience, to follow their ordinary business." Thus Jenner argued that though Smallpox might not keep off Cowpox, it made Cowpox milder.

VIII.—Elizabeth Wynne, Dairymaid.

"In 1759 had Cowpox slightly when 19 years of age. "As the malady had shown itself in so slight a manner," observed Jenner, "and as it had taken place at so distant a period of her life, I was happy with the opportunity of trying the effects of variolous matter upon her constitution, and on the 28th of March, 1797, I inoculated her" without effect. Nevertheless in the following year, 1798, she again caught Cowpox, having a "large pustulous sore" accompanied with "general lassitude, shiverings, alternating with heat, coldness of extremities, and a quick and irregular pulse."

IX.—William Smith, Farm Servant.

Although [wrote Jenner as preface to this Case] the Cowpox

shields the constitution from the Smallpox, and the Smallpox proves a protection against its own poison, yet it appears that the human body is again and again susceptible of the infectious matter of the Cowpox.

In 1780, when attending to Horses with sore heels, Smith conveyed the equine infection to Cows, "and from the Cows it was communicated to Smith. In 1791, the Cowpox broke out at another farm where he then lived as a servant, and he became affected with it a second time; and in 1794 he was so unfortunate as to catch it again. The disease was equally as severe the second and third time as it was on the first." He was twice inoculated with Smallpox in 1795, and exposed to Smallpox without effect.

X.—Simon Nichols, Farm Servant.

In 1782 was employed in dressing the sore heels of Horses, and at the same time assisted in milking Cows, thereby infecting them and generating Smallpox. Changing his situation, he communicated the disease to other Cows, and was himself severely affected. Some years afterwards, he was inoculated with Smallpox by Jenner without effect.

XI.—William Stinchcomb, Farm Servant.

In 1782 had Cowpox severely on the same farm with Nichols. In 1792 he was inoculated with Smallpox along with a large party, but in his case without result. "During the sickening of some of his companions, their symptoms so strongly recalled to his mind his own state when sickening with the Cowpox, that he very pertinently remarked their striking similarity."

XII.—Hester Walkley, Farm Servant.

In 1782 had Cowpox when she was attended by Jenner. In 1795 she, and seven other pauper women of Tortsworth, who also had had Cowpox, were inoculated with Smallpox by Henry Jenner without effect. "This state of security proved a fortunate circumstance," observed

Jenner, "as many of the poor women were at the same time in a state of pregnancy." Why then, it might have been asked, did Henry Jenner try to variolate them?

These Twelve Cases illustrate Jenner's procedure; and those familiar with scientific methods, and the scrutiny and caution requisite to arrive at trustworthy physiological data, will view with some astonishment his free and easy induction. In the majority of the Cases he was without proof that his subjects had suffered Cowpox; and the absence of this certainty was the more remarkable as he knew that the dairy-folk described as Cowpox several varieties of eruption. The same rural observers who held that Cowpox averted Smallpox, also held that Smallpox averted Cowpox; and yet Jenner had to show in Rodway's Case No. vii., that they were mistaken; although, granting the thesis that Smallpox and Cowpox were equivalents and mutually preventive, the rural faith ought to have stood justified, and Smallpox shown to be good against Cowpox. Again Jenner allowed that an attack of Cowpox did not prevent a subsequent attack of Cowpox, saying—

> It is singular to observe that the Cowpox virus, although it renders the constitution insusceptible of the variolous, should nevertheless leave it unchanged with respect to its own action.

Singular indeed! The observation in presence of the principle to be established was nothing short of imbecile. If Smallpox prevented Smallpox, and Cowpox was one with Smallpox, and Cowpox did not avert Cowpox, how was Cowpox to avert Smallpox? The insusceptibility of Jenner's subjects to variolous inoculation was, as observed, of little account. Resistance to inoculated Smallpox was of common occurrence, and inoculators practised various dodges to overcome it. To have made such experiments approximately conclusive would have required the inoculation with Smallpox of subjects of corresponding ages and temperaments who had not passed through Cowpox; and the probability is that the results would not have been dissimilar.

We must not, however, proceed farther until Cowpox is described; and for that purpose I cannot do better than cite Jenner verbatim.

JENNER'S DESCRIPTION OF COWPOX.

Cowpox appears on the nipples of the Cows in the form of irregular pustules. At their first appearance they are commonly a palish blue, or rather of a colour somewhat approaching to livid, and are surrounded by an inflammation. These pustules, unless a timely remedy be applied,* frequently degenerate into phagedenic [spreading] ulcers, which prove extremely troublesome. The animals become indisposed, and the secretion of milk is much lessened.

Inflamed spots now begin to appear on different parts of the hands of the domestics employed in milking, and sometimes on the wrists, which run on to suppuration, first assuming the appearance of the small vesications produced by a burn. Most commonly they appear about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form, with their edges more elevated than their centres, and of a colour distantly approaching to blue. Absorption takes place, and tumours appear in each axilla [arm-pit].

The system becomes affected, the pulse is quickened; shiverings, succeeded by heat, general lassitude and pains about the loins and limbs, with vomiting, come on. The head is painful, and the patient is now and then even affected with delirium. (P. 3.)

And Jenner might have added, with convulsions.

Having drawn this alarming picture of the effects of Cowpox, he interposes—

These symptoms arise principally from the irritation of the sores, and not from the primary action of the vaccine virus upon the constitution. (P. 5.)

If Cowpox meant all this, some might prefer, at least, the risk of Smallpox; hence the judicious explanation—the irritation of the sores, and not the poison in the blood, was the cause of the distressing symptoms. Jenner went on—

These symptoms, varying in their degrees of violence, generally continue from one day to three or four, leaving ulcerated sores

* Such timely remedies were solutions of sulphate of zinc or sulphate of copper—a hint for those in quest of antidotes for Vaccination.

about the hands, which, from the sensibility of the parts, are very troublesome, and commonly heal slowly, frequently becoming phagedenic, like those from whence they sprang. During the progress of the disease, the lips, nostrils, eyelids, and other parts of the body, are sometimes affected with sores; but these evidently arise [How evidently?] from their being heedlessly rubbed or scratched with the patient's infected fingers. (P. 5.)

It was this serious disease, this communicated Cowpox, which the subjects of the foregoing Cases were assumed to have passed through; and Jenner, in conformity with the opinion of the dairies, held that they were thereby rendered proof against Smallpox. Whilst his Twelve Cases make a show of inquiry, they bear no trace of extensive or critical research. In the general inoculations then prevalent, those who had undergone Cowpox were not treated as protected (as were those who had had Smallpox) but were "cut" with their neighbours —as, in Case xii., were the eight cowpoxed paupers of Tortworth. Yet Jenner was at no pains to collect and set forth the evidence of other Gloucestershire practitioners, who, in the course of duty, must have known as much of Cowpox as himself, and might have set scores of Cases alongside his perfunctory dozen.

Having perused Jenner's description of Cowpox, let us now turn to his account of its origin.

GENERATION OF COWPOX IN HORSEGREASE.

There is a disease to which the Horse, from his state of domestication, is frequently subject. The Farriers have termed it THE GREASE. It is an inflammation and swelling in the heel, accompanied in its commencement with small cracks or fissures, from which issues a limpid fluid, possessing properties of a peculiar kind. This fluid seems capable of generating a disease in the human body (after it has undergone the modification I shall presently speak of) which bears so strong a resemblance to the Smallpox, that I think it highly probable it may be the source of that disease.

In this Dairy Country a great number of Cows are kept, and the office of milking is performed indiscriminately by Men and Maid Servants. One of the former having been appointed to apply dressings to the heels of a Horse affected with the malady I have mentioned, and not paying due attention to cleanliness, incautiously bears his part in milking the Cows, with some particles of the infectious matter adhering to his fingers. When this is the case,

it frequently happens that a disease is communicated to the Cows, and from the Cows to the Dairy-maids, which spreads through the farm until most of the cattle and domestics feel its unpleasant consequences. This disease has obtained the name of THE COWPOX.

Thus the disease makes its progress from the Horse (as I conceive) to the nipples of the Cow, and from the Cow to the Human Subject. (Pp. 2 and 6.)

This conception of the origin and progress of the disease was not Jenner's specially: he shared it with the farmers to whom it was a novelty—

The rise of Cowpox in this country may not have been of very remote date, as the practice of milking Cows might formerly have been in the hands of women only; which I believe is the case now in some other dairy countries; and consequently that the Cows might not in former times have been exposed to the contagious matter brought by the men servants from the heels of Horses. *Indeed a knowledge of the source of infection is new in the minds of most of the farmers in this neighbourhood*, but has at length produced good consequences; and it seems probable from the precautions they are disposed to adopt, that the appearance of the Cowpox here may either be entirely extinguished or become extremely rare. (P. 56.)

Thus Cowpox was to be extinguished by forbidding milkers to handle Horses' greasy heels. Jenner himself tried to produce Cowpox in the manner described, but without success—

It is very easy [he wrote] to procure pus from old sores on the heels of Horses. This I have often inserted into scratches made with a lancet on the sound nipples of Cows, and have seen no other effects from it than simple inflammation. (P. 45.)

What was requisite for success, he concluded, was the limpid fluid from the Horse's heel at an early stage of the disease, and that it should be applied to the Cow's nipples at a certain season—

The virus from the Horses' heels is most active at the commencement of the disease, even before it has acquired a pus-like appearance; indeed I am not confident whether this property in the matter does not entirely cease as soon as it is secreted in the form of pus. I am induced to think it does cease, and that it is the thin darkish-looking fluid only, oozing from the newly formed cracks in the heels, similar to what sometimes appears from erysipelatous blisters, which gives the disease. Nor am I certain that the nipples of the Cows are at all times in a state to receive the

infection. The appearance of the disease in the spring and the early part of the summer, when they are disposed to be affected with spontaneous eruptions so much more frequently than at other seasons, induces me to think, that the virus from the Horse must be received upon them when they are in this state in order to produce effects. Experiments, however, must determine these points. (P. 45.)

Whilst thus explicit as to what was requisite for the infection of the Cow by the Horse, Jenner did not succeed in producing Cowpox from Horsegrease. He had to write—

The spring of the year 1797, which I intended particularly to have devoted to the completion of this investigation, proved from its dryness remarkably adverse to my wishes. No Cowpox appeared in the neighbourhood; for it most frequently happens that while the farmers' Horses are exposed to the cold rains of spring their heels become diseased. (P. 44.)

Yet without proof, he argued as if he had proof, saying—

With respect to the opinion adduced, that the source of the infection is a peculiar morbid matter arising in the Horse, although I have not been able to prove it from actual experiments conducted immediately under my own eye, yet the evidence I have adduced appears sufficient to establish it. (P. 43.)

Evidence adduced! Of evidence there was none. The farmers might be right in their opinion that Cowpox sprang from Horsegrease, but opinion was not evidence, nor even such assurance as this of Jenner's—

I feel no room for hesitation respecting the common origin of the disease, being well convinced that it never appears among the Cows unless they have been milked by some who at the same time has the care of a Horse affected with diseased heels. (P. 44.)

But not even to this conviction did he adhere. "It was highly probable," he thought, "that not only the heels of the Horse, but other parts of the body of that animal, are capable of generating the virus which produces the Cowpox"—

An extensive inflammation of the erysipelatous kind appeared without any apparent cause upon the upper part of the thigh of a sucking Colt, the property of Mr. Millet, a farmer at Rockhampton, the inflammation continued several weeks, and at length termin-

ated in the formation of three or four small abscesses. The inflamed parts were fomented, and dressings were applied by some of the same persons who were employed in milking the Cows. The number of Cows milked was 24, and the whole of them had the Cowpox. The milkers, consisting of the farmer's wife, a man and a maid servant, were infected by the Cows. The man servant had previously gone through the Smallpox, and felt but little of the Cowpox. The servant maid had some years before been infected with the Cowpox; and she also felt it now in a slight degree. But the farmer's wife, who had never gone through either Smallpox or Cowpox felt its effects very severely.

That the disease produced upon the Cows by the Colt, and from thence conveyed to those who milked them, was the *True* and not the *Spurious* Cowpox, there can be scarcely any room for suspicion; yet it would have been more completely satisfactory had the effects of variolous matter [Inoculation with Smallpox] been ascertained on the farmer's wife; but there was a peculiarity in her situation which prevented my making the experiment. (P. 62.)

Spurious Cowpox! What was Spurious Cowpox? Here is Jenner's answer—

Pustulous sores frequently appear spontaneously on the nipples of the Cows, and instances have occurred, though very rarely, of the hands of the servants employed in milking being affected with sores in consequence, and even of their feeling an indisposition from absorption. These pustules are of a much milder nature than those which arise from that contagion which constitutes the True Cowpox. They are always free from the bluish or livid tint so conspicuous in the pustules of that disease. *No erysipelas attends them*, nor do they show any phagedenic disposition, as in the other case, but quickly terminate in a scab without creating any apparent disorder in the Cow. This complaint appears at various seasons of the year, but most commonly in the spring, when the Cows are first taken from their winter food and fed with grass. It is very apt to appear also when they are suckling their young. But *this disease is not to be considered as similar in any respect to that of which I am treating*, as it is incapable of producing any specific effects upon the Human Constitution. However, it is of the greatest consequence to point it out here, lest the want of discrimination should occasion an idea of security from the infection of the Smallpox, which might prove delusive. (Pp. 7 and 8.)

Nothing could be more explicit. Cowpox was of two kinds—True and Spurious. The Spurious consisted of pustular sores which appeared spontaneously on the nipples of Cows, and was of no avail against Smallpox:

the True Cowpox, on the other hand, was not a disease of the Cow, but of the Horse transmitted to the Cow.

It is of prime importance to bear this distinction in mind; for if it is not borne in mind, much that remains to be told must appear confused or unintelligible. As we have seen, it was the belief of the dairymaids that if they caught Cowpox they would never afterwards catch Smallpox. Medical men in practice in Gloucestershire ridiculed the dairymaids' belief. They said—

"We know that such is the dairymaids' faith, but it is mistaken; for we know dairymaids who have had Cowpox and afterwards had Smallpox in spite of their Cowpox."

At this point Jenner intervened, saying—

"Let us distinguish. Eruptions contracted in milking are indiscriminately described as Cowpox by dairy-folk; but there is an eruption attended with erysipelas and fever which has all the virtue they claim for it. This variety of eruption does not originate on the Cow, but is communicated to the Cow from the Horse. Thus the dairymaids are right and they are wrong. They are right when the pox they catch is derived from the Horse through the Cow: they are wrong when the pox they catch originates on the Cow without the Horse. In short Cowpox proper is of no avail against Smallpox. It is Horsegrease Cowpox that is of sovereign and infallible virtue. Any maid who receives Horsegrease Cowpox into her veins is, as she believes, for ever after secure from the infection of Smallpox."

Let us therefore bear in mind that Jenner's prescription was not Cowpox but HORSEGREASE COWPOX. It is a point to be insisted upon; for, as we shall see, it was lost from sight, and kept out of sight, to the utter confusion of the question.

We now come to Jenner's Cases of Horsegrease—for not only were farm-folk reputed secure from Smallpox by reason of Cowpox, but farriers likewise in consequence of infection with Horsegrease.

XIII.—THOMAS PEARCE, son of a Farrier.

In consequence of dressing Horses with sore heels at his father's when a lad, had sores on his fingers which suppurated, and occasioned pretty severe indisposition. Six years afterwards, Jenner inoculated him repeatedly with Smallpox, but only produced slight inflammation, and exposed him to the contagion of Smallpox without effect.

On this Case Jenner observed—

It is a remarkable fact, and well-known to many, that we are frequently foiled in our endeavours to communicate Smallpox by inoculation to blacksmiths, who in the country are farriers. They often, as in the above instance, either resist the contagion entirely, or have the disease anomalously. Shall we not be able now to account for this on a rational principle?

XIV.—JAMES COLE, Farmer.

Was infected with Horsegrease in the same way as Pearce. Some years afterwards was inoculated with Smallpox, but only a few eruptions appeared on his forehead, which passed away without maturation.

XV.—ABRAHAM RIDDIFORD, Farmer.

Was affected with very painful sores in both hands, tumours in each arm-pit, and severe and general indisposition, in consequence of dressing a Mare that had sore heels. He was attended by a surgeon, who recognising a similarity of the sores upon his hands with those of Cowpox, and knowing the effect of Cowpox on the human constitution, assured him that he never need fear Smallpox; but, twenty years afterwards, he caught the disease, which ran its regular course.

From these Cases Jenner drew this conclusion—

Although the absorption of matter from sores on the heels of Horses, secures, or nearly secures, the system from variolous infection, yet it is possible that this cannot be entirely relied upon, until a disease has been generated by morbid matter from the Horse on the nipple of the Cow, and passed through that medium to the human subject.

Which conclusion he repeated thus—

> The active quality of the virus from the Horse's heels is greatly increased after it has acted on the nipples of the Cow; as it rarely happens that the Horse affects his dresser with sores; and as rarely that a milkmaid escapes infection when she milks infected Cows. (P. 45.)

From this conclusion, Jenner at a subsequent period withdrew. The virus from the Horse was employed for inoculation without transmission through the Cow, and with results equally satisfactory. As we shall find, Jenner used and distributed Equine Virus neat, which he certified as "the true and genuine life-preserving fluid."

So far the Cases set forth described no more than ordinary Gloucestershire experience; but we now come upon ground regarded as peculiarly Jennerian.

XVI.—Sarah Nelmes, Dairymaid.

In 1796 was infected with Cowpox, receiving the virus on a part of her hand scratched by a thorn. From the large pustulous sore on Sarah's hand Jenner, on the 14th May, inoculated—

XVII.—James Phipps, eight years old.

Said Jenner, "The more accurately to observe the progress of the infection, I selected a healthy boy, about eight years old, for the purpose of Inoculation for the Cowpox." The matter was inserted into his arm by two incisions, barely penetrating the cutis, each about half an inch long. The inoculation "took," and was followed by a chill, loss of appetite, headache, and restless sleep. On the 1st of July, the poor lad was inoculated with Smallpox, and again several months afterwards, it is said, without effect.

> Here [wrote Jenner] my researches were interrupted till the spring of the year 1798, when, from the wetness of the early part of the season, many of the farmers' Horses were affected with sore heels, in consequence of which Cowpox broke out among several of our dairies, which afforded me an opportunity of making further observations upon the curious disease.

About the latter end of February, 1798, William Haynes and Thomas Virgoe, having to wash a Mare with sore heels, were infected with Grease, and described their sensations as much the same as when they were inoculated with Smallpox. Their infection proved that if Grease was good against Smallpox, Smallpox was not good against Grease. Haynes was employed as a milker, and Pox broke out among his master's Cows about ten days after he had first assisted in washing the Mare's heels.

XVIII.—JOHN BAKER, five years old.

Inoculated, 16th March, 1798, with matter taken from a pustule on the hand of the aforesaid Thomas Virgoe poisoned with Grease from the Mare's heels. "He became ill on the sixth day with symptoms similar to those excited by Cowpox, and on the eighth was free from indisposition."

On this case of Horsegrease inoculation, Jenner observed—

> We have seen that the virus from the Horse is not to be relied upon as rendering the system secure from variolous infection, but that the matter produced by it on the nipple of the Cow is perfectly so. Whether the virus passing from the Horse through the human constitution, as in the present instance, will produce a similar effect remains to be decided. This would have been effected, but the boy was rendered unfit for Smallpox Inoculation from having felt the effects of a contagious fever in a work-house soon after this experiment was made.

Mark the assumption, "*The virus from the Horse is not to be relied upon as rendering the system secure from variolous infection, but the matter produced by it on the nipples of the Cow is perfectly so!*" Such was Jenner's method of induction! How could he leave the question undecided? Why not have waited until little Baker recovered from his fever? or why not have inoculated another work-house child with Horsegrease? The true sons of science do not rush into print in such shameless deshabille.

XIX.—William Summers, aged five and a half.

Inoculated 16th March, 1798, from the nipple of one of the Cows infected with Horsegrease by Haynes. Subsequently inoculated with Smallpox without effect.

XX.—William Pead, aged eight.

Inoculated, 28th March, from Summers. Subsequently inoculated with Smallpox without effect.

XXI.—Hannah Excell, aged seven,

And several children and adults were inoculated from the arm of Pead on 5th April. "The greater part of them sickened on the sixth day, and were well on the seventh; but in three of the number a secondary indisposition arose in consequence of an extensive erysipelatous inflammation which appeared on the inoculated arms. By the application of mercurial ointment to the inflamed parts (a treatment recommended under similar circumstances in the inoculated Smallpox) the complaint subsided without giving much trouble."

Excell was inoculated in three places on her arm. "This," said Jenner, "was not done intentionally, but from the accidental touch of the lancet, *one puncture being always sufficient.*" The resulting pustules so much resembled those arising from inoculation with Smallpox, "that an experienced inoculator would scarcely have discovered a shade of difference."

XXII.—Four Children.

On 12th April virus was taken from Hannah Excell and inserted in the arms of—

Robert F. Jenner,	aged	11 months,
John Marklove,	„	18 „
Mary Pead,	„	5 years,
Mary James,	„	6 „

R. F. Jenner did not "take." The arms of the others inflamed, and Jenner fearing erysipelas, as in the preced-

ing cases, applied a caustic of soap and quick-lime to Marklove and James, "which," he says, "effectually answered my intention in preventing erysipelas." The disease was suffered to take its course in Pead, and no erysipelas appeared.

XXIII.—JOHN BARGE, aged seven.

Inoculated from Mary Pead, and successfully. Was subsequently inoculated with Smallpox without effect.

"These experiments," said Jenner, "afforded me much satisfaction; they proved that the matter in passing from one human subject to another, through five gradations, lost none of its original properties, John Barge being the fifth who received the infection successively from Wm. Summers, the boy to whom it was communicated from the Cow."

These are Jenner's Cases. In them we have his "Masterpiece of Medical Induction"—the fruit of thirty years of incessant thought, of watching, and of experiment! Let us carefully observe the dates. Until 1796, when he operated on Phipps, he never made an experiment in Horsegrease Cowpox Inoculation; and not until the middle of March, 1798, a few weeks before going to press with the *Inquiry*, did he repeat the experiment; and though his later cases were complicated with erysipelas, he did not stay to dispose of the difficulty and alarm thereby excited. He got together his scratch lot of Cases, as if under some over-mastering compulsion, and consigned the concern, crude and incomplete, to the public. By-and-by the hasty performance came to be spoken of as the result of thirty years of incessant thought, of patient research, and of unwearied labour. It is unnecessary to argue the matter. Whilst there is nothing too great for the credulity of those who are in the disposition of belief, yet facts are facts, and there is the stone-wall of the *Inquiry* with its authentic details whereon to crack the skulls of romancers. In Jenner's story as recited to the vulgar, we have the advantage of

witnessing the development of myth in the light of our own age under our own eyes.

Taking Jenner's *Inquiry* at the utmost, What was it? A suggestion to substitute Horsegrease Cowpox for Smallpox in inoculation. That was all. Beyond this there was no point of novelty. Some have credited Jenner with originating the transfer of virus from arm to arm; but in this respect he followed the example of many variolators. There was a mild form of Smallpox occasionally prevalent in London called "pearly pox," and Dr. Adams and others kept it going from patient to patient; and the virus from the body of a healthy variolated child was in constant request by timid folk, who fancied the virulence of the original infection might thereby be abated in transmission.

So much for Jenner's data. Now for a word or two as to the speculation that invested his prescription.

He considered that some of the diseases which afflict men are derived from their domestication of animals, and that thus several diseases might have a common origin. "For example," he asked, "Is it difficult to imagine that measles, scarlet fever, and ulcerous sore throat with a spotted skin, have all sprung from the same source?"

About the imagination, there might be little difficulty: the difficulty lay in the production of proof that any disease in man was derived from disease in animals, and that disease so derived was variously manifested. Jenner wished to have it believed that a variety of Cowpox was generated from Horsegrease, which Cowpox was the source of Smallpox. He adduced no evidence, however, to connect outbreaks of Smallpox with Cowpox; nor did he ever suggest that dairymaids caught Smallpox from Cows, or farriers from Horses. His identification of Horsegrease Cowpox with Smallpox was the resemblance of their pustules, and on the ground of this resemblance he affirmed the equivalence of the diseases. Thus in describing his first inoculation of Cowpox, that of Phipps from the hand of Sarah Nelmes on the 14th of May, 1796, he wrote—

The appearance of the incisions in their progress to a state of maturation was much the same as when produced in a similar manner by variolous matter. This appearance was in a great measure new to me, and I ever shall recollect the pleasing sensations it excited; as, from its similarity to the pustule produced by variolous inoculation, it incontestably pointed out the close connection between the two diseases, and almost anticipated the result of my future experiments. (P. 30.)

The similarity of the Cowpox and Smallpox pustules *incontestably pointed out* the close connection between the two diseases! The observation and the conclusion are worth notice, being characteristic of Jenner's loose and illogical mind. He was familiar with Tartar Emetic, and he might have observed that it produced pustules on the skin exactly like those of Cowpox and Smallpox; wherefore would it have been fair to argue that the pustules being alike, their causes were incontestably identical? Dr. Hamernik of Prague observes—

Some years ago the theory was brought forward, under the auspices of the great alchemistical artist, Hufeland, that Vaccination from Tartar Emetic pustules was a perfect substitute for Vaccination with Cowpox, and had the same beneficent effect. With this I fully agree; and I remark further, that if Tartar Emetic pustulation is produced in Cows and Calves, and vaccine matter is then taken from them, such Vaccination is also perfectly harmless. The most convincing proof of the beneficent and identical action of such Vaccination with that of Cowpox, is furnished by the fact that it presents pustules similar in size and form, therefore, necessarily of identical value.*

Having identified Horsegrease Cowpox with Smallpox, by reason of similarity of pustules, he went on to assert that such Horsegrease Cowpox was equivalent to Smallpox for inoculation, and was attended with the like prophylaxy, saying—

What renders the Cowpox virus so extremely singular is, that the person affected with it is forever after secure from the infection of the Smallpox; neither exposure to the variolous effluvia, nor the insertion of the matter into the skin producing this distemper. (P. 7.)

It is curious also to observe, that the virus, which, with respect to its effects, is undetermined and uncertain previously to its

* *Remarks on Certain Medical Principles.* London, 1882.

passing from the Horse through the medium of the Cow, should then not only become more active, but should invariably and completely possess those specific properties which induce in the human constitution symptoms similar to those of the variolous fever, and effect in it that peculiar change *which for ever* renders it insusceptible of the variolous contagion. (P. 48.)

And so on. The assurance was absolute, and the warrant for the assurance was the Cases adduced, and the similarity of Horsegrease Cowpox pustules and Cowpox pustules! But if the pustules were similar, the effects were not similar. Inoculation with Smallpox produced Smallpox, mild or otherwise, with pustules few or many; but inoculation with Horsegrease Cowpox was attended with no eruption beyond the points of incision—

It is an excess in the number of pustules which we chiefly dread in the Smallpox; but in the Cowpox no pustules appear, nor does it seem possible for the contagious matter to produce the disease from effluvia; so that a single individual in a family might at any time receive it without the risk of infecting the rest, or of spreading a distemper that fills a country with terror. (P. 58.)

Very good; but where are we? If similarity of pustule proved the identity of Smallpox and Horsegrease Cowpox, what did those graver dissimilarities between the diseases prove? That an objection so obvious should never have occurred to Jenner indicates the extent of his logical capacity.

Jenner's expectation from the issue of the *Inquiry* had nothing of the prophetic character described by his enthusiastic biographers. It is only necessary to peruse its pages and note the dates in order to perceive the impossibility of the vision of 1780 described by Baron when Jenner exhibited to Gardner his future glory, and how he was destined to stand like Aaron between the living and the dead until the plague was stayed. Alas! how many similar fables may we entertain because the means of detection are not, as in Jenner's case, available.

When Jenner was writing, the English people were committed to Smallpox Inoculation, or more accurately Smallpox culture, and it was in competition with Small-

pox that he advanced Cowpox. "If asked," he said, "whether his investigation be matter of mere curiosity, or whether it tend to any beneficial purpose," he replied by setting forth the draw-backs to the existing practice, and contrasting them with the advantages of his own.

> Notwithstanding [he wrote] the happy effects of Inoculation, with all the improvements the practice has received since its first introduction into this country, it not very unfrequently produces deformity of the skin, and sometimes, under the best management, proves fatal. (P. 57.)

On the contrary, he said—

> I have never known fatal effects arise from the Cowpox, even when impressed in the most unfavourable manner, producing extensive inflammations and suppurations on the hands; and as it clearly appears that this disease leaves the constitution in a state of perfect security from the infection of the Smallpox, may we not infer that a mode of Inoculation may be introduced preferable to that at present adopted, especially among those families, which, from previous circumstances, we may judge to be predisposed to have the disease unfavourably?

Inoculation was freely charged with exciting scrofula; thus Jenner observed—

> In constitutions predisposed to scrofula, how frequently we see the inoculated Smallpox rouse into activity that distressful malady; and the issue does not seem to depend on the manner of the inoculation, for it as often occurs in those who receive it mildly as in those who receive it severely. (P. 60.)

Happily he had the grace to refrain from the explicit assertion that Cowpox was exempt from similar hazard; yet with characteristic inconsistency, was disposed to advance a claim for it as an expulsive irritant—

> As we have seen [though he never showed] that the constitution may at any time be made to feel the febrile attack of Cowpox, might it not, in many chronic diseases, be introduced into the system, with the probability of affording relief, upon well-known physiological principles? (P. 60.)

A reader of the *Inquiry* in 1798 could never have supposed that it was an attempt to displace the existing practice of Inoculation. Nor is there any sign that Jen-

ner at the time contemplated such an issue. He referred to Variolous Inoculation with respect, and was satisfied to suggest that in certain cases inoculation with Horsegrease Cowpox might be substituted with advantage. As to the permanent existence of Horsegrease Cowpox he was doubtful. Since, he said, the farmers had traced the infection to the Horse, "the appearance of the Cowpox may either be entirely extinguished or become extremely rare." It may be replied that this behaviour on the part of Jenner was due to reserve and tact, but the reserve and tact are invisible. The *Inquiry* was simply what it appears—a hasty performance, which, in other hands, developed to more, far more, than its author contemplated. Subsequently he, and his friends for him, laid claim to years of research under the influence of supernatural foresight; but, with the *Inquiry* before us, I ask where is the evidence? I take the date, 14th May, 1796, when Jenner inoculated Phipps from the hand of Sarah Nelmes, as the time when the project of inoculation with Horsegrease Cowpox began to assume form, and I maintain that the character, order and dates of the Cases set forth in the *Inquiry* plainly show that they were got together to sustain the conclusion then arrived at. When Mr. John Simon descants on Jenner's thirty years of incessant thought, watching and experimenting which resulted in the production of that Masterpiece of Medical Induction—*The Inquiry*, the answer is, Peruse the *Inquiry*, and then say where the fruit of thirty years of labour is to be found. The assertion is too absurd for discussion, whatever it may be as an article of faith.

The single point of originality in the *Inquiry* was the definition of the disease for which prophylactic efficacy was asserted. The dairymaids said Cowpox: the farriers said Horsegrease. Jenner said neither Cowpox nor Horsegrease, but their combination in Horsegrease Cowpox, which variety of Pox alone ensured life-long security from Smallpox. We shall see as we proceed how this position was surrendered and resumed, modified and confused beyond recognition. Let it suffice at present to

say that the note of Jenner's *Inquiry* was HORSEGREASE COWPOX and nothing else. Strike out HORSEGREASE COWPOX, and the affair is reduced to nonentity.

THE VARIOLOUS TEST.

What was called the Variolous Test worked wonderfully for Jenner; and as we shall have to refer to it repeatedly, it may be well to describe and dispose of it at once.

We have seen how the Test was practised in the Cases in the *Inquiry*. Those who had undergone Cowpox were inoculated with Smallpox, and as the Smallpox did not "take," they were assumed to be proof against that disease. Hence the absolute conclusion proclaimed *Urbi et Orbi*, that none inoculated with Cowpox could ever afterwards contract Smallpox.

It was replied, that some who *had* suffered from Cowpox *had* contracted Smallpox, and that others *had* received the disease by inoculation; to which Jenner's summary answer was, "There must have been some mistake about the Cowpox; for no one *can* have genuine Cowpox and subsequently incur Smallpox, either by infection or inoculation."

Cowpox was inoculated and propagated from arm to arm; and, in proof that the constitution was fortified against Smallpox, it was common to inoculate with Smallpox, which usually did not "take"; whereon the operator exclaimed, "Behold! the patient is insusceptible of Smallpox *for ever!*"

Such was the Variolous Test. It was to multitudes absolutely conclusive; and to question its validity was to exhibit a contentious and unphilosophic disposition.

What shall we now say concerning it?

First, that failures were numerous in Variolous Inoculation apart from Vaccination, and that it was not supposed that when a patient did not "take," he was therefore insusceptible of Smallpox; nor even when he did "take," that he was thereby rendered proof against Smallpox. So many of the successfully inoculated did

subequently fall victims to Smallpox, that Variolators at the end of last century were compelled to argue (like Vaccinators at the end of this) that Variolation was a guard, but not an absolute guard; and that when it did not altogether avert Smallpox, it modified and mitigated an attack. The excuse for failure was as artful as the motive was urgent: Variolation was too good a trade to be imperilled for lack of a little ingenuity.

Nevertheless, if we make full allowance on the score of frequent incapacity to receive Variolation, we have yet to explain, on a candid view of the whole evidence, how it was that in numerous cases Inoculation with Smallpox was ineffective after Inoculation with Cowpox.

"What can you urge against the Variolous Test?" was a frequent and imperious demand.

The explanation in general lay in the fact, that Variolation was attempted before the complete subsidence of the vaccine fever. The inoculation with Cowpox had set up a serious constitutional disturbance, and during that disturbance the Smallpox virus could not develop its malign energy. Let me show what I mean from the testimony of Jenner himself.

On 15th March, 1800, the Duke of York requested Jenner to proceed to Colchester to the 85th Regiment. Jenner was unable to go, and sent his nephew, George, instead, who had to report a complete failure. The reason of the failure was, that the entire Regiment, with women and children, had the itch! Jenner was then driven to the conclusion which, says Baron, "he adopted and invariably maintained to the last hour of his life, namely, that any cutaneous disease, however slight in appearance, was capable of interfering with the regular course of the Cowpox and of preventing it from exercising its full protecting influence."*

Just so: and mark how the same logic applies to the Variolous Test, which "nobody could get over." If any cutaneous disorder, however slight, could nullify Cow-

* Baron's *Life of Jenner*, vol. i. p. 380.

pox, was it not equally probable that the cutaneous disorder induced by inoculated Cowpox would nullify inoculated Smallpox *until the effects of the Cowpox had time to subside?* When the itch at Colchester was cured, then inoculation with Cowpox was found to be practicable. Thus worthless was the Variolous Test on Jenner's own principle; yet with such evidence under his eyes and among his fingers, he failed to discern its significance. Nor apparently did he inquire whether the influence of Cowpox was perpetuated over specified periods of six months, nine months, one year, two years, and so on. As trader and adventurer, it suited him better to be not over inquisitive, and to avow boldly that his specific conferred life-long immunity from Smallpox.

Vaccinators at this day rarely refer to the once famous Variolous Test: to do so would be absurd. The fact of Re-Vaccination, of Vaccination after Vaccination at short intervals, proves, that whatever the influence of the operation, it is transient and not permanent; and the cases of Smallpox after Vaccination, and of Smallpox in its most malignant forms after Re-Vaccination, as if induced thereby, leave the Variolous Test, which so widely impressed and imposed upon our forefathers, an exploded piece of jugglery.

CHAPTER III.

JENNER IN 1798.

JENNER, with his wife and daughter, left Berkeley for London on 24th April, 1798, in order to see the *Inquiry* through the press. He remained in London until 14th July, and failed, if he tried, to induce any inoculator to substitute cowpox for smallpox. In the Jenner legend, it is usual to find some touching remarks on this trip to town: genius unrecognised: truth turned from every door: the great soul abiding in patience and courage in-

vincible. Dates, however, are again merciless. The *Inquiry* was not in the booksellers' hands until the end of June, and, within a fortnight after publication, Jenner was on his way to Berkeley. There was no occasion for the virtues specified.

Among Jenner's acquaintance was Henry Cline, teacher of surgery in St. Thomas's Hospital; and with Cline he left some virus in a quill that he had taken from the arm of Hannah Excell, at Berkeley on 5th April. Cline had a patient, a child named Richard Weller, with an affection of the hip-joint, and intending to create an issue by way of counter-irritation, he inoculated the hip with Excell's virus, and thus described the experiment in a letter to Jenner—

LINCOLN'S INN FIELDS, *2nd August, 1798.*

The Cowpox experiment has succeeded admirably. The child sickened on the seventh day; and the fever, which was moderate, subsided on the eleventh day. The inflammation extended to about four inches diameter, and then gradually subsided without having been attended with pain or other inconvenience. The ulcer was not large enough to contain a pea; therefore, I have not converted it into an issue as I intended. I have since inoculated him with smallpox in three places, which were slightly inflamed on the third day, and then subsided.

Dr. Lister, who was formerly physician to the Smallpox Hospital, attended the child with me, and he is convinced that it is not possible to give him the smallpox.

I think the substituting of cowpox poison for the smallpox promises to be one of the greatest improvements that has ever been made in medicine; for it is not only so safe in itself, but also does not endanger others by contagion, in which way the smallpox has done infinite mischief. The more I think on the subject, the more I am impressed with its importance.

Cline then attempted to vaccinate with virus taken from Weller's hip, but failed. He wrote to Jenner—

LINCOLN'S INN FIELDS, *18th August, 1798.*

Seven days since I inoculated three children with cowpox matter, and I have the mortification of finding that the infection has not taken, and I fear I shall be entirely disappointed unless you can contrive to send me some fresh matter. I think it might come in a quill in a letter, or enclosed in a bit of tin-foil.

Jenner was unable to comply with Cline's request: he had no cowpox to transmit: and readers of the *Inquiry* who addressed to him similar requests had to submit to similar disappointments, out of which some suspicion was naturally developed. The recommendation of a remedy whereof there was no available supply was not a passport to confidence.

Baron relates, that "Mr. Cline perceiving *at once* from the success of his first trial, what incalculable blessings were connected with the diffusion of the new practice, immediately advised Jenner to quit the country, and to take a house in Grosvenor Square, and promised him £10,000 per annum as the result of his practice; in which opinion Mr. Cline was supported by Sir W. Farquhar; but that all these splendid prospects of wealth and distinction could not move Jenner."*

The story is either an invention, or it does little credit to Cline's judgment. Jenner had neither the means for a house in Grosvenor Square, nor was there any likelihood of his earning £10,000 a year by cowpox. Nevertheless it would appear that at this juncture some one was advising him to try London (one's vanity is never without a prompter), and that Jenner replied—

CHELTENHAM, *29th September.*

My perplexity really amounts to agitation. On the one hand, unwilling to come to town myself for the sake of practice, and, on the other, fearful that the practice I have recommended may fall into the hands of those who are incapable of conducting it, I am thrown into a state that was not at first perceptible as likely to happen to me; for, believe me, I am not callous to all the feelings of those wounds which, from misrepresentation, might fall on my reputation; on the contrary, no nerves could feel more acutely; and they now are actually in a tremor from anticipation.

How very few are capable of conducting physiological experiments! I am fearful that before we thoroughly understand what is cowpox matter, and what is not, some confusion may arise, for which I shall, unjustly, be made answerable.†

If his correspondent had been a man of sense, he might have replied—

* Baron's *Life of Jenner*, vol. i. p. 154. *Ibid.* p. 155.

Why so much ado about nothing! You recommend that horse-grease cowpox be substituted for smallpox in cases of inoculation. It is a simple prescription, easily determined altogether apart from you, and there is no reason why you should work yourself into such a flutter.

But Jenner was not the unimpassioned man of science, who can leave truth to take care of itself, and submit when truth contradicts his prepossessions. Dr. Ingenhousz, an Anglicised Dutchman (born at Breda, 1730), with reputation as electrician and chemist, read the *Inquiry* with considerable amazement. He was himself an inoculator of mark, having been selected by the Empress Maria Teresa to operate upon the imperial family of Austria; and by her had been rewarded (after the pattern of Catharine of Russia and Dimsdale) with a pension of £600 a year, and the titles of Aulic Councillor and Imperial Physician. Naturally, therefore, Ingenhousz had a lively interest in Jenner's project, and being on a visit to the Marquis of Lansdowne at his seat in Wiltshire, addressed him as follows—

Bowood Park, *12th October, 1798.*

As soon as I arrived at Bowood, I thought it my duty to inquire concerning the extraordinary doctrines contained in your publication, as I knew the cowpox was well known in this county.

The first gentleman to whom I addressed myself was Mr. Alsop, an eminent practitioner at Calne, who made me acquainted with Mr. Henry Stiles, a respectable farmer at Whitley, who, thirty years ago, bought a cow at a fair, which he found to be infected with what he called the cowpox. This cow soon infected the whole dairy; and he himself, by milking the infected cow, caught the disease which you describe, and that in a very severe way, accompanied with pain, stiffness, and swelling of the axillary glands. Having recovered from the disease, and all the sores dried, he was inoculated with smallpox by Mr. Alsop. The disease took place, a great many pox came out, and he communicated the infection to his father who died of it.

This being an incontrovertible fact, cannot fail to make some impression on your mind, and excite you to inquire further on the subject before you venture finally to decide in favour of a doctrine, which may do great mischief should it prove erroneous.

The impression made on Jenner's mind was simply one of annoyance. He fell back on the assertion that all

was not cowpox that was supposed to be cowpox, and that Farmer Stiles could not have had the genuine distemper, or he would not have received smallpox by inoculation. It did not even occur to him that it was necessary to investigate and account for the evidence adduced by Ingenhousz, which was every whit as valid as much of his own. He was content to protest—

> In the course of my inquiry, not a single instance occurred of any one having the disease, either casually or from inoculation, who on subsequent exposure to variolous contagion received the infection of smallpox. . . . . Should it appear in the present instance that I have been led into error, fond as I may appear of the offspring of my labours, I had rather strangle it at once than suffer it to exist, and do a public injury. At present, I have not the most distant doubt that any person, who has once felt the influence of perfect cowpox matter, would ever be susceptible of that of the smallpox.

Could universal conclusion be deduced from more questionable premisses? and this, too, by one who had just exclaimed, "How very few are capable of conducting physiological experiments!" Always, as we shall see, ungenerous toward those who questioned his assertions, Jenner wrote to his friend, Gardner—

> This man, Ingenhousz, knows no more of the real nature of the cowpox than Master Selwyn does of Greek: yet he is among philosophers what Johnson was among the literati, and, by the way, not unlike him in figure—

When, in fact, what provoked him was that Ingenhousz knew too much about cowpox, and had laid his finger on the point of error at the outset. Inquiry on the part of Ingenhousz brought to light several other instances of smallpox after cowpox; and Dr. Pulteney of Blandford reported that Dorsetshire inoculators were familiar with the one sort of pox after the other sort. Jenner's constant answer to such objections was, "Yes; but it could not have been true cowpox to start with"—a style of argument maintained with parrot-like persistency when smallpox followed vaccination. "Ah!" it was said, "there must have been some mistake about the

vaccination; for no one can be thoroughly vaccinated and have smallpox."

Looking back on the final years of last century, it is much to be regretted that more pains were not taken to hold Jenner fast to his position that smallpox never followed cowpox, and to demonstrate beyond contention that it was not true. It certainly was not true; the evidence to that fact was indisputable; but few were disposed to follow Ingenhousz into the West of England and search for the requisite proof; and Ingenhousz was cut out of the controversy by his death at Bowood on 7th September, 1799. Presently Jenner managed to have the contention shifted from the experience of the dairies to vaccination from arm to arm and the illusory variolous test, and the advantage of a decision at the springs of fallacy was lost. In the general confusion which ensued Jenner came to be taken for a discoverer, and he posed diligently in the character, when he was nothing more than the advertiser of the vulgar opinion of his neighbourhood, with the modification that not Cowpox but Horse-grease Cowpox was the true and infallible specific. The fact is so clear, that he was a mere advertiser, that it would not be worth repetition, were it not so systematically treated as unseen. How distinctly it was at first recognised appears in a letter of thanks for a copy of the *Inquiry* addressed to Jenner by Francis Knight, a London surgeon, wherein he observed—

CLIFFORD STREET, *10th September, 1798.*

I have read your publication with much satisfaction; and, from a long residence in the dairy part of Wiltshire, as well as in Gloucestershire, I know the facts to be well supported; at least, it was a general opinion among the dairymen, that those who had received the cowpox were not susceptible of the variolous disease. The cowpox pustule is very familiar to my eye, and I am quite charmed with the delineation of it in your plates. You have opened to the world a very curious field of investigation, and it is too interesting a subject to die with the day.*

In these remarks of Knight, we have Jenner's position

* Baron's *Life of Jenner*, vol. i. p. 159.

accurately defined. He made himself responsible for "the general opinion among the dairymen"; and had some one at that time shown in perspicuous and emphatic fashion that the dairymen were wrong, Jenner would have been summarily disposed of. Vain, however, are such regrets; and we may find comfort in the reflection that there is an order in the universe which converts misfortune into means for greater and rarer good.

Another letter to Jenner from Dr. Hicks contains these remarks—

BRISTOL, *3rd October, 1798.*

I wish you had been able to have communicated the cowpox to the cow by means of inoculation from a greasy horse's heel, for your work would then have been more complete and satisfactory.

I do not see that you need hesitate to accept the invitation given you to inoculate with the cowpox, convinced as you are that it will secure the persons so inoculated from ever being infected with the smallpox.

Everlasting security from smallpox! Such was the unqualified promise, and with how little warrant! In presence of a Socratic inquirer with his persistent, how do you know? Jenner must have stood confounded.

A letter to Jenner from Dr. Percival, also contains some remarks worth notice. He wrote—

MANCHESTER, *20th November, 1798.*

The facts you have adduced incontestably prove the existence of the cowpox, and its ready communication to the human species. But a larger induction is yet necessary to evince that the virus of the Variolæ Vaccina renders the person who has been affected with it secure during the whole of life from the infection of the smallpox.

Mr. Simmons, an ingenious surgeon of this town, has inoculated a human subject with the ichor issuing from what is termed the grease in horses; but the fluid introduced, though eight punctures were made, neither occasioned inflammation nor eruption; yet the same child was soon afterwards inoculated with success for the smallpox. Mr. Simmons has now engaged a herd of cows, and is busily employed in making such experiments as your publication has suggested.

It is very remarkable, that the cowpox has been hitherto unnoticed in Cheshire, which is not less a dairy county than Gloucestershire, and where the office of milking is performed also by men and maid servants indiscriminately.

The frequent statement that Jenner's *Inquiry* was at first received with indifference is entirely untrue: on the contrary, it was read with interest from the outset, and the only check he met was due to his inability to supply the demands of correspondents for samples of the precious virus. Cowpox was absent for awhile from the dairies, and great was his relief and delight when toward the end of 1798 some matter was obtained from a farm at Stonehouse wherewith on the 27th November he vaccinated the children of his friend, Henry Hicks of Eastington; "the first gentleman," says Baron, "who had the merit of submitting his own children to the new practice."

Ere 1798 had passed away, Jenner had secured an energetic ally in Dr. George Pearson, F.R.S., Physician to St. George's Hospital, London.* Pearson entered into the cowpox question with his whole heart, and constituted himself a sort of partner in Jenner's project. He wrote to him—

LEICESTER SQUARE, *8th November, 1798.*

Your name will live in the memory of mankind, as long as men possess gratitude for services and respect for benefactors; and if I can but get matter, I am much mistaken if *I do make you live for ever.*

And in a more decided strain on 13th November—

I wish you could secure me matter for inoculation, because, depend upon it, a thousand inacurate but imposing cases will be published against the specific nature of the disease by persons who want to send their names abroad about anything, and who will think *you and me* fair game.

In the same letter he told Jenner what some were saying about the suggested practice—

You cannot imagine how fastidious the people are with regard to this business of the cowpox. One says that it is very filthy and nasty to derive it from the sore heels of horses. Another, that we shall introduce the diseases of animals among us, and that we have already too many of our own. A third sapient set say, it is a

* Born at Rotherham, 1751. Graduated M.D., Edinburgh, and practised at Doncaster until 1784, when he removed to London. Died at his house in Hanover Square from a fall down stairs, 9th November, 1828.

strange odd kind of business, and they know not what to think of it. All this I hear very quietly, and recollect that a still more unfavourable reception was given to inoculation for the smallpox.

Such observations were natural and to be expected. Jenner wrote to Gardner that "brick-bats and hostile weapons of every sort were flying thick around him," but they were chiefly imaginary. His revelation was communicated to a ready world. It was no revolutionary project, but a seductive modification of existing practice. Inoculation with smallpox was the order of the day among all respectable people. The operation was troublesome and uncertain, perilous to patients and to those in contact with them; and, when all was done, it afforded no unquestionable security against the disease it was designed to avert. To a community thus harassed and anxious, came Jenner with his prescription and his promise—Substitute cowpox for smallpox and you will escape from this distress, danger, doubt. You will have a harmless fever without pustules and without risk of infection, and the security from smallpox will be absolute and perpetual. What wonder that in such circumstances Jenner's message was heard gladly and accepted with grateful enthusiasm. That he should have encountered some resistance was inevitable, for what change is ever effected without opposition and ominous prediction? But the change Jenner proposed was the slightest of changes with the largest prospects of advantage. Unless these conditions are borne in mind, we shall never rightly understand the reception accorded by our forefathers to inoculation with cowpox.

CHAPTER IV.

PEARSON'S *INQUIRY.*

DR. PEARSON'S *Inquiry concerning the History of the Cowpox* * is a remarkable proof of the alacrity and energy with which Jenner's project was entertained. As observed, Jenner's *Inquiry* was published at the end of June, 1798, and ere six months were over, in November, 1798, appeared Pearson's *Inquiry*, a masterly review of Jenner's; and not only a review, but a record of investigation, personal and by correspondence with country physicians and farmers; the entire work displaying a capacity for business to which Jenner was wholly unequal.

Cowpox did not come before Pearson as a novelty, nor Jenner in connection therewith. He relates—

> When I was in company with the late Mr. John Hunter, about nine years ago, I heard him communicate the information he had received from Dr. Jenner, that in Gloucestershire an infectious disorder frequently prevailed among the milch cows, named the Cowpox, in which there was an eruption on their teats; that those who milked such cows were liable to be affected with pustulous eruptions on their hands, which were also called the cowpox; that such persons as had undergone this DISEASE COULD NOT BE INFECTED BY THE VARIOLOUS POISON; and that as no patient had been known to die of the Cowpox, the practice of the inoculation of the poison of this disease, to supersede the Smallpox, might be found, on experience, to be a great improvement in physic.
>
> I noted these observations, and constantly related them, when on the subject of Smallpox, in every course of lectures which I have given since that time. (P. 5.)

The communication of Jenner to Hunter was nothing of a discovery. There was no secret in the existence of Cowpox, nor in the belief that inoculation therewith fortified the sufferer against Smallpox. Dr. Pulteney, of Blandford, informed Pearson that—

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* *An Inquiry concerning the History of the Cowpox, principally with a view to supersede and extinguish the Smallpox.* By George Pearson, M.D., F.R.S., Physician to St. George's Hospital, etc. London, 1798, 8vo., pp. 116.

Cowpox is well known in Hampshire, Dorsetshire, Somersetshire, and Devonshire. It is not unknown in Leicestershire, and other midland counties; but dairymen keep it a secret as much as possible, as it is disreputable to the cleanliness of their produce. (P. 8.)

In the northern counties and in Wales, Cowpox was either rarely seen or unknown. In Cheshire, as much of a dairy county as Gloucestershire, where also men acted as milkers, the disease was never met with. Where, however, Cowpox was recognised, the faith in its efficacy against Smallpox appeared to be general, and inoculators regarded it as a bar to their success. Thus Mr. Giffard, surgeon, Gillingham, wrote to Pearson, 9th August, 1798—

Cowpox is more known in Dorsetshire than in most counties. Last winter I inoculated three parishes, and some of the subjects told me they had had the Cowpox, and that they should not take the Smallpox; but I desired to inoculate them, and did so two or three times, but without effect. Persons never take the Smallpox after they have had the Cowpox. (P. 14.)

At a milk-farm on the Hampstead Road, Pearson found a man who had often seen Cowpox in Wiltshire and Gloucestershire. He said that—

He had known many who had had Cowpox, and they never suffered from the Smallpox, although it prevailed in their own families. To use his own words, they who have had the Cowpox "are hard to take the Smallpox." (P. 29.)

Mr. Rolph, surgeon, Peckham, who had practised in Gloucestershire, informed Pearson that—

Cowpox was very frequently epizootic in the dairy-farms in the spring. . . . . A great number of instances of the Cowpox in milkers had fallen under his observation, but not a single mortal, or even dangerous, case occurred. There was not a medical man in Gloucestershire, or scarce a dairy-farmer, who did not know from his own experience, or that of others, that those who have suffered the Cowpox are exempt from the agency of the variolous poison. (P. 95.)

Dr. Croft likewise told Pearson—

That in Staffordshire to his knowledge, the fact had been long known of the Cowpox, which prevails in that county, affording an exemption of the human subjects from the Smallpox. (P. 35.)

Nor did what was so widely believed escape mention in medical literature. Thus Dr. Beddoes, in *Queries concerning Inoculation*, had written in 1795—

I have learnt from my own observation, and the testimony of some old practitioners, that susceptibility to the Smallpox is destroyed by the Cowpox, which is a malady more unpleasant than dangerous.

And Dr. Adams, in his treatise on *Morbid Poisons*, 1795, observed—

Cowpox is a disease well known to the dairy-farmers in Gloucestershire. What is extraordinary, as far as facts have hitherto been ascertained, a person infected with Cowpox is rendered insensible to the variolous poison.

And Dr. Woodville in his *History of Inoculation*, 1796, argued—

It has been conjectured that the Smallpox might have been derived from some disease of brute animals; and, if it be true that the mange affecting dogs, can communicate a species of itch to man; or that a person, having received a certain disorder from handling the teats of cows, is thereby rendered insensible to variolous infection ever afterwards—then, indeed, the conjecture is not improbable.

The belief, moreover, that Cowpox was good against Smallpox, had tempted several to court the disease. The Rev. Herman Drewe wrote to Pearson of himself and Mr. Bragge, surgeon, Axminster, 5th July, 1798—

Mr. Bragge and I endeavoured to try the experiment of inoculating with the matter of the Cowpox, but from the scarceness of the disease, and unwillingness of patients, we were disappointed. (P. 39.)

Mr. Dolling of Blandford related that—

Mr. Justings, of Axminster, inoculated his wife and children with matter taken from the teats of a cow that had the Cowpox. In about a week afterwards their arms were very much inflamed, and the patients were so ill that the medical assistance of Mr. Meach, of Cerne, was called for. The patients did well. They were afterwards inoculated for the Smallpox by Mr. Trobridge without effect. (P. 42.)

Dr. Pulteney of Blandford informed Pearson that—

A respectable practitioner inoculated seven children for the Smallpox, five of whom had been purposely infected with the Cowpox by

being made to handle the teats and udders of cows under the disease, and in consequence contracted the distemper. These five, after inoculation for the Smallpox, did not sicken, whilst the other two did. (P. 39.)

These cases were examples of many; and if it be asked, why were not such inoculations repeated, we may take an answer from Mr. Fewster, surgeon, of Thornbury, who, in a practice of thirty years in Gloucestershire, inoculated thousands with Smallpox, and had known "numberless instances of Cowpox." He wrote, 11th October, 1798—

In general, I think, Cowpox is a much more severe disease than the inoculated Smallpox; nor do I see any great advantage from its inoculation. Smallpox inoculation seems to be so well understood that there is very little need of a substitute. It is curious, however, and may lead to other improvements. (P. 104.)

To show still further how Jenner's communication was "in the air" ready for descent. Mr. Downe, surgeon of Bridport, wrote to Pearson, 1st August, 1798—

A few years ago when I inoculated a great number for the Smallpox, I remarked that I could not by any means infect one or two of them; and, on inquiry, I was informed that they had previously been infected with the Cowpox. I know that a medical man in this part of the country was injured in his practice by a prejudice raised unjustly that *he intended to substitute the Cowpox for the Smallpox in inoculation*, So great an enemy to improvement are the prejudices of the public in the country, that I think experiments of importance can only be made in hospitals. (P. 10.)

Thus popular scandal anticipated what was called Jenner's discovery!

Nor was Pearson content simply to inquire of others: he experimented himself, and put Cowpox to the test a week or so before the appearance of Jenner's *Inquiry*. He wrote—

Happening, on the 14th of June, to be with Mr. Lucas, apothecary, on professional business at Mr. Willan's farm, adjoining the New Road, Marylebone, where from 800 to 1000 milch cows are kept, I availed myself of the opportunity to make inquiry concerning the Cowpox. I was told it was a pretty frequent disease among the cows of that farm, especially in winter, and that it was supposed to arise from sudden change from poor to rich food. It was also well known to the servants, some of whom had been affected

with the malady from milking the diseased cows. On investigation, I found that three of the men-servants, namely, Thomas Edinburgh, Thomas Grimshaw, and John Clarke had been affected with the Cowpox, but not with the Smallpox. I induced them to be inoculated for the Smallpox, and, with the view of ascertaining the efficacy of the variolous infection employed, William Kent and Thomas East, neither of whom had either the Cowpox or the Smallpox, were also inoculated. (P. 14.)

The result conformed to expectation: Edinburgh, Grimshaw, and Clarke did not take Smallpox, even though inoculation was repeated, whilst Kent and East did. Pearson set forth his experiments much more philosophically than Jenner, but his bias was pronounced, and it blinded him to some obvious considerations; and it is marvellous how easily we may accumulate details for which we have a fancy. Summing up the testimonies he had collected, he held that—

The body of evidence is numerous and respectable, declaring that a person who has laboured under the Cowpox fever and local eruption, is not susceptible of the Smallpox. It does not appear that a single well authenticated contravening instance has fallen under observation. But I do not apprehend that accurate and able reasoners will consider the fact as completely established, though, I doubt not, they will allow that the testimonies now produced greatly confirm the probability, and that the cautious appropriation of it in practice is warrantable. (P. 64.)

In this summary we perceive the limit and imperfection of Pearson's *Inquiry.* Smallpox *did* follow Cowpox: it was well known that it did: and Dr. Ingenhousz ascertained the fact as soon as he looked for it. Moreover Pearson showed himself ignorant of Jenner's position, who, recognising the fallacy of the rural superstition, was compelled to discriminate Cowpox as genuine and spurious—the genuine being the variety derived from Horsegrease.

Upon Jenner's assertion that Cowpox was unaltered by transmission from arm to arm, Pearson remarked, "The fact remained to be proved." That Cowpox produced a harmless ailment was not, he thought, to be hastily assumed. Dr. William Heberden had recently inoculated 800 poor persons at Hungerford without a mishap, and

1700 had passed through Dr. Woodville's hands in the current year (1798) with only two deaths; yet how erroneous would be to argue that variolous inoculation was harmless from such special experience!

> Such instances of success can only be attributed to a certain favourable epidemic state of the human constitution itself, existing at particular times, for the proportion of deaths from inoculation is usually much greater, owing, probably, to certain unfavourable epidemic states. (P. 67.)

If Cowpox remained unchanged in transmission from arm to arm, it would be no harmless ailment; for the evidence was distinct that it was frequently a severe one. For example, Edinburgh told Pearson that when suffering from Cowpox he had to give up work and go into an hospital; and Grimshaw that the disease was uncommonly painful, with swellings in his armpits, sore to the touch; and the servant at Rhodes's farm in the Hampstead Road, who had seen much Cowpox in Wiltshire and Gloucestershire, said the milkers were sometimes so ill that they had to keep their beds for several days, though none ever died of the Cowpox fever. If, however, by transmission from arm to arm, Cowpox became milder, it was not improbable that at the same time it would lose more or less of its protective efficacy.

Pearson might have seen and added, that resistance to inoculated Smallpox, when the constitution was in no humour for Smallpox, was no proof that the same constitution would resist Smallpox when epidemic, or in condition for the evolution of the disease.

Pearson likewise took objection to Jenner's evidence (such as it was) that it was possible to take Cowpox after Cowpox, but not Smallpox after Cowpox; saying—

> Most of professional men are extremely reluctant in yielding assent to this statement. Some, indeed, reject it in the most unqualified terms. That Cowpox follows Cowpox appears certain, but that Cowpox should avert Smallpox, and not avert itself appears incredible. (P. 44.)

Here we see Pearson on the verge of discovery of the illusion, but with all his training and Yorkshire shrewd-

ness he lost the scent, and allowed himself to be deceived; and not only deceived, but to become a prime mover in the deception of the world. Jenner felt the difficulty and replied—

CHELTENHAM, *27th September, 1798.*

MY DEAR SIR,—You may be assured that a person may be repeatedly affected, both locally and generally, by the Cowpox, two instances of which I have adduced, and have many more in my recollection; but, nevertheless, I have some reason to suspect that my discriminations have not been, till lately, sufficiently nice. . . . . Certain it is, that the skin is always subject to the ulcerative effects of the virus; but whether the constitution can repeatedly feel the primary effects of it, I have experiments in view to determine. (P. 99.)

This passage is commended to those who hold with Mr. John Simon that Jenner delivered to the world "a Master-piece of Medical Induction," the fruit of thirty years of incessant thought, watching and experiment. It is plain that in 1798 the very elements of the problem were by him undetermined, and the most obvious objections unforeseen and unconsidered.

Pearson's strongest opposition was reserved for the asserted origin of Cowpox in Horsegrease. He said—

It has no better support than the coincidence in some instances of the two diseases in the same farm in which the same servants are employed among the Horses and Cows.

I have found that in many farms the Cowpox breaks out although no new-comer has been introduced to the herd; although the milkers do not come in contact with the Horses; although there are no greased Horses; and even although there are no Horses kept on the farm.

It appears that the Cowpox does not break out under the most favourable circumstances, if it be occasioned by *the Grease.* "I have had," writes Sir Isaac Pennington, Cambridge, 14th September, 1798, "Dr. Jenner's book some weeks, and the particulars stated in it are really astonishing. I have made inquiries upon the subject at Cottenham and Willingham, in which two parishes 3000 milch Cows are kept; also a great many Horses of the rough-legged cart kind (much liable to the scratches or grease) half the parishes being under the plough, and the men much employed in milking. But I cannot find that any pustulous eruptions on the teats of the Cows, or on the hands of the milkers, have ever been heard of." (P. 82.)

In the opening of his *Inquiry,* Pearson was good

enough to say of Jenner, "I would not pluck a sprig of laurel from the wreath that decorates his brow"; but, disputing the origin of genuine Cowpox in Horsegrease, he might have asked himself, what sprig of laurel he had left. That Cowpox originated in Horsegrease was not Jenner's discovery. As Pearson ascertained in the London milk farms, "There was such a notion entertained in several parts of the country, whatever might be its foundation." (P. 86.) But the definition of Horsegrease Cowpox as the form of Cowpox that justified the faith of the country-folk in the power of the disease to avert Smallpox, was Jenner's solitary distinction—the principle and motive of his *Inquiry*, which, to prove fallacious, was to extinguish his title to regard. Cowpox apart from Horsegrease was clearly taught by Jenner to have no influence on the constitution, and to be attended with no erysipelas. "Let me call your attention," he wrote to Pearson, 27th September, 1798, "to a similarity between the Smallpox and the Cowpox when inoculated. The symptoms of absorption first disturb the system, and, secondly, the system feels the consequences of the local sores. Exactly so with the Cowpox; and as *the Cowpox inflammation is always of the erysipelatous kind*, when it spreads over the skin to any great extent, it produces symptoms not unlike the confluent Smallpox." (P. 100.)

Pearson foresaw that if the principle of inoculation with Cowpox were established it would lead to other applications—

> The Cow Poison appears to alter the human constitution, so as to render it insusceptible of a different morbific poison, namely, the variolous in producing the Smallpox. This fact is, I believe, quite a novelty in physiology and pathology: it indicates a new principle in the mode of prophylactic practice. And we now see a principle upon which diseases from various other morbific poisons may possibly be prevented from taking place, such as the Measles, Ulcerous Sore Throat, Hooping Cough, Syphilis, etc., namely, in consequence of destroying the excitability of the constitution to such poisons by the agency of different, and perhaps less hurtful ones. Whether the Cowpox preserves the constitution from other morbific poisons, besides the variolous, is an undecided question. (P. 79.)

Like Jenner, he also recognised in Cowpox a counter-irritant—a safe sort of fever that might be used to drive off other diseases—

If it be true that the same constitution is liable to undergo repeatedly the Cowpox, to which distemper no one has fallen a victim, practitioners may avail themselves of this means of exciting an innocent fever as a remedy of various disorders; it being a truth, admitted by men of experience, that fevers are occasionally efficacious remedies, especially for inveterate chronic maladies, such as Epilepsy, Hysteria, Insanity, St. Vitus's Dance, Tetanus, skin deformities and diseases, etc. (P. 81.)

Nor was the notion without warrant, for Smallpox itself was credited with a double action as a generator and exterminator of disease—

A disposition to certain diseases, and even diseases themselves, are not rarely brought on by the Smallpox; but sometimes also dispositions to diseases, and diseases themselves of the most inveterate kind are removed by the Smallpox. (P. 77.)

In one respect, Jenner showed himself superior to Pearson, namely, in offering some explanation of Cowpox. Pearson accepted the disease on the rural terms—as an eruption on Cows attended with no serious illness. If in any way such Pox was equivalent to Smallpox, it was inexplicable that it should be limited to the udder and teats of milch cattle, and that males, and females not in milk, should be exempt from infection. A disease so unique wanted accounting for; but Pearson made no attempt to account for it, nor gave any sign that he apprehended the difficulty. Jenner, on the other hand, accounted for Pox on the Cow by referring it to infection from the Horse conveyed by the milkers, which explanation Pearson rejected. But in giving Jenner credit for so much, let it not be for over much. Whilst he ascribed Cowpox to a credible cause, he did not recognise his advantage and summon gainsayers to explain how Cowpox, as described by them, could exist without Bullpox. On the contrary, as we shall see, Jenner submitted to be silenced on this point for reasons far from creditable.

CHAPTER V.

WOODVILLE, PEARSON AND JENNER.

ANOTHER early and earnest examiner of Jenner's *Inquiry* was Dr. William Woodville, physician to the London Smallpox and Inoculation Hospital. He was a Cumberland man, born at Cockermouth, 1752; a member of the Society of Friends. An ardent botanist, he turned two acres of the ground around the Hospital at King's Cross into a botanic garden, which he maintained at his own expense. He died of a chronic pulmonary complaint in 1805, and in his last illness had himself removed from his house in Ely Place to the Hospital for the sake of the garden and the country air.

Woodville was eager to try cowpox, but Jenner had no supply, nor could any be had elsewhere. He therefore resorted to horsegrease, but could make nothing of it. In his own words—

> Conceiving that the distemper might be produced by inoculating the nipples of Cows with the matter of the grease of Horses, I proceeded to try whether the Cowpox could be actually excited in this manner. Numerous experiments were accordingly made upon different Cows with the matter of grease, taken in the various stages of that disease, but without producing the desired effect.
>
> Neither were inoculations with this matter, nor with several other morbid secretions in the Horse, productive of any effects upon the human subject.*

Thrice in person did Woodville submit to inoculation with horsegrease, but in vain. Others in London and elsewhere attempted to raise pox on cows in the same way without result save malediction on Jenner for originating such a troublesome quest.

Thus closed 1798 with many anxious to try the new prescription whenever there was a chance. Early in the new year, there was a cry in London, 'Tis found! 'tis found! In Harrison's dairy, Gray's Inn Road, close by the

* *Reports of a Series of Inoculations for the Variolæ Vaccinæ or Cowpox.* London, 1799.

Smallpox Hospital, cowpox was discovered, and thither hastened Woodville, Pearson, Sir Joseph Banks, Sir William Watson, Dr. Garthshore, Dr. Willan, and other medical men; and in their presence, on 19th January, Woodville inoculated six patients with the pox.* The eruptions on the cows' teats were diligently compared with the description and plates in Jenner's *Inquiry*, and pronounced identical. Four-fifths of the 200 cows in the dairy became affected, those not in milk escaping the disease; likewise some of the milkers, the first being Sarah Rice, who had undergone smallpox in childhood—a proof that smallpox did not prevent cowpox. "At the same time," wrote Dr. Pearson, "I received the agreeable intelligence that the disease was also raging in the largest stock of cows on the New Road, near Paddington, to which no one could gain admittance but myself."

With cowpox thus provided in abundance, Pearson and Woodville set to work—Woodville at his Hospital, and Pearson in private practice. Be it observed, however, that this London cowpox was not Jenner's cowpox. It was not horsegrease cowpox, but the variety stigmatised by Jenner as spurious. How Pearson and Woodville pressed forward with their enterprise appears from the following letter, enclosing cowpox threads, sent by Pearson to two hundred medical practitioners throughout the United Kingdom—

LEICESTER SQUARE, *12th March, 1799.*

Sir,—I hope you will pardon me for taking the liberty to inform you (by way of additional evidence to the testimonies I have published on the subject of the Cowpox) that upwards of 160 patients, from two weeks to forty years of age, principally infants, have been inoculated since the 20th January last by Dr. Woodville and myself, separately. . . . .

Not one mortal case has occurred.

Not one of the patients has been dangerously ill. . . .

None of the patients, namely above 60, inoculated with the Smallpox, subsequently to the Vaccine Disease, took the infection. . . .

In many of the cases eruptions of the body appeared, some of which could not be distinguished from the Smallpox.

* J. C. Wachsel in *London Medical Repository*, 1819, p. 257.

I have sent the matter of Cowpox pustules on the thread enclosed, in order, if you approve of the inquiry, to inoculate with it; and I entreat you to favour me with the result of your trials: but I must trouble you to apply the test of inoculating with variolous matter subsequently to the vaccine disorder.

GEORGE PEARSON, M.D., F.R.S.

P.S.—I am happy to be able to state that at Berkeley, Dr. Jenner has continued his trials of inoculation with vaccine matter sent from London with good success.

Jenner was of an indolent disposition, but the part Pearson was playing stung him to action. His nephew, Rev. G. C. Jenner, wrote to him from London, and thus roused his jealousy—

NORFOLK STREET, *11th March, 1799.*

After what Mr. Paytherus has written to you it will be needless for me to say anything to urge the necessity of your coming to town to wear the laurels you have gained, or to prevent their being placed on the brows of another. . . . .

Dr. Pearson is going to send circular letters to medical gentlemen to let them know that he will supply them with Cowpox matter upon their application to him, by which means *he* will be the chief person known in the business, and consequently deprive you of that merit, or at least a great share of it, which is so justly your due. Dr. Pearson gave a public lecture on the Cowpox on Saturday, and adopted your opinions, except with regard to the probability of the disease originating in Horses' heels. . . . . All your friends agree that *now* is your time to establish your fame and fortune; but if you delay taking a personal active part any longer, the opportunity will be lost for ever.—Your affectionate nephew, G. C. JENNER.

Jenner at once communicated the alarming intelligence to his friend Gardner with a sly suggestion for counteraction—

BERKELEY, *Wednesday.*

A letter just received from G. Jenner informs me that Dr. Pearson on Saturday gave a public lecture on the Cowpox, and that it was publicly exhibited at Sir Joseph Banks's on Sunday evening. He has also given out that he will furnish any gentleman at a distance with the virus.

As this is probably done with the view of showing himself as the first man in the concern, should not some neatly drawn paragraphs appear from time to time in the public prints, by no means reflecting on the conduct of P., but just to keep the idea publicly alive that P. was not the author of the discovery—I mean of Cowpox Inoculation.—Yours truly, E. J.

As human nature exists, it was not extraordinary that Jenner should feel anxious over the occupation of ground he considered his own; but at the same time it is obvious, that Pearson had done nothing wrong, nothing that was not allowable, nothing indeed that was not praiseworthy. He allowed Jenner full credit for having advertised the Gloucestershire faith in cowpox, and for the production of certain evidence for that faith; but he set aside Jenner's prescription of horsegrease cowpox, and was making use of a form of cowpox that Jenner had explicitly condemned. Whilst Jenner, too, had excited curiosity, he did nothing, or could do nothing, to satisfy it; and it was idle to expect the world to await his convenience: nor was Pearson the man to rest content where action was possible. As he said—

> From the time of the publication of the *Inquiry* in June, 1798, the author contributed no further inoculated cases to the end of that year; nor could I do more than investigate the history of the Cowpox principally by inquiries among provincial physicians and farmers, from whom I was enabled to confirm some of the facts in Dr. Jenner's book, and to render doubtful or disprove others, and to bring to light new observations.*

Jenner was not slow to repond to his nephew's summons to London. He left Berkeley on the 21st of March, and remained in town until the 11th of June, visiting medical men, asserting his own claims, and counter-acting the operations of Pearson and Woodville.

In Dr. Pearson's circular, it will be observed, that he described inoculation with cowpox as attended with eruptions in some cases, which could not be distinguished from smallpox. So far as Pearson and Woodville were concerned, it was an unfortunate statement, and gave Jenner an advantage over them which he used unsparingly to their discredit.

Jenner's claim for inoculation with cowpox was, that it excited a fever that was not infectious and was without pustular eruptions; and here was Dr. Pearson setting up as his critic, and Dr. Woodville assuming to develop

* *Examination of Report of Committee of House of Commons*, 1802.

his practice, and producing a disorder that was indistinguishable from smallpox! Such presumption and ignorance deserved to be hooted.

What was the explanation? Simply this: that Woodville conducted some of his cowpox inoculations in the variolous atmosphere of his Hospital, and that he thereby communicated smallpox and cowpox simultaneously. In a scientific sense, the experience was valuable; it proved that it was possible to have cowpox and smallpox at the same time—that neither disease superseded or nullified the other.

Woodville tried to vindicate himself, and in his failure magnified Jenner's triumph still further. Yet he had much that was reasonable to say for himself. For example, he had transmitted to Jenner some of the virus from one of the first of his cowpox inoculations in January, and with it Jenner operated on twenty persons, reporting to Woodville—

BERKELEY, *February, 1799.*

The rise, progress, and termination of the pustules created by the virus were exactly that of the true Cowpox.

Nevertheless, wrote Woodville—

This virus which Dr. Jenner declared to be perfectly pure and genuine was taken from the arm of an hospital patient who had 310 pustules, all of which suppurated.

Woodville also argued, that "Cowpox, as casually produced by milking infected cows, differs considerably from that which is the effect of inoculation"; which Jenner attested in saying—

Four or five servants were inoculated at a farm contiguous to Berkeley last summer with matter just taken from an infected Cow. A little inflammation appeared on all their arms, but died away without producing a pustule; yet all these servants caught the disease within a month afterwards from milking the infected Cows, and some of them had it severely.*

Others maintained that the cowpox which saved milkmaids from smallpox was a much severer affection than

* *Further Observations on the Variolæ Vaccinæ*, 1799.

that induced by Jenner's lancet, and that it was folly to assume their equivalence. There was force in the argument; for every one then knew how much the issue of smallpox inoculation depended on the mode of its performance. The infection when communicated through the skin was usually much less severe than when communicated by incision; and Jenner related how a country inoculator, who liked to "cut deep enough to see a bit of fat," was the death of his patients on every side. The human body is of infinite delicacy and complexity, and we are sure to find ourselves at fault when we deal with its mysteries according to our crude and inanimate logic. It is by experiment and not by syllogism that physiological truth is verified.

Whatever might be the perils, immediate or remote, of inoculation with cowpox, it was not attended with smallpox eruption; and at last it became manifest to Woodville himself, that the virus he had used, and the virus he had distributed, which had produced such eruption, was the virus of smallpox.

After much controversy and many experiments these conclusions were arrived at—

1. That when a person was inoculated with smallpox and cowpox about the same time, both inoculations proved effective. There was a pustular eruption on the skin from the smallpox, and the cowpox vesicle reached maturity in the usual number of days.

2. These effects took place, without much variation, in all cases where the interval between the two inoculations did not exceed a week; but—

3. When the smallpox matter was inserted on the ninth day after the inoculation with cowpox, its action seemed to be wholly precluded.*

That is to say, for a time—until the influence of the vaccine fever had worn off. Some fancied that smallpox when inoculated with cowpox generated a hybrid pox that was more efficacious than either. There was occa-

* *On Vaccine Inoculation.* By Robert Willan, M.D. London, 1806.

sionally some interaction of the diseases, as of a subdued activity in each, but generally they proceeded together unaffected, the cowpox maintaining its characteristics in the midst of a crop of smallpox.

One point of great significance in Woodville's experience was overlooked. He inoculated with cowpox in the Smallpox Hospital, and some of his patients there contracted smallpox, who certainly were not inoculated with smallpox, either accidentally or by design. The lesson of this experience was unperceived, and though it has been repeated again and again, is rarely acknowledged. Vaccination in presence of smallpox, or in an epidemic of smallpox, is often a means of inducing the disease it is intended to prevent. It lights the fire; and when the fire is lighted, it is said, "Ah! it must have been a-light before." When we have a mind for an excuse, our sophistry is usually equal to the requisition.

The New Inoculation, as it was called, grew in favour daily. Woodville and Pearson did the real work of publicity and promotion—Pearson especially. Within seven months, January to August, 1799, they performed 2000 inoculations. In the *Philosophical Journal*, August, 1799, Pearson observed—

> In Scotland the New Inoculation has not been less successful. Dr. Anderson, of Leith, informs me that he has inoculated above 80 persons; that Dr. Duncan has begun the practice in Edinburgh and that it has been introduced in Dundee, Paisley, and Dalkeith.

Nor did Pearson limit his efforts to his native land. He wrote—

> In the course of the same year, 1799, I extended the dissemination of the vaccine matter to Germany, for the Princess Louisa at Berlin, to Hanover, Vienna, Geneva, Lisbon, Paris, and Boston, and into the British Army through Mr. Keats.

Jenner regarded much of this activity with a jealous eye: it did not sufficiently make for his glory. He was anxious, fretful, helpless. "It is impossible for me, single-handed, to combat all my adversaries," was his whine. "I am beset on all sides with snarling fellows, and so ignorant withal that they know no more of the disease

they write about than the animals which generate it." In order to keep his name to the fore, he published a second pamphlet in the spring of 1799, in which are several details of biographical interest.

CHAPTER VI.

JENNER'S *FURTHER OBSERVATIONS.**

THIS pamphlet appears to have been produced with many pains and extraordinary apprehensions. Jenner wrote to Gardner, 7th March, 1799—

> Every sentence must be again revised and weighed in the nicest balance that human intellect can invent. The eyes of the philosophic and medical critic, prejudiced most bitterly against the hypothesis, will penetrate its inmost recesses, and discover the minutest flaw were it suffered to be present. Language I put out of the question: it is the matter I refer to.†

These words betray excitement for which there was no warrant; and when we turn to the treatise that was to be weighed sentence by sentence in the nicest of balances, it is clearly seen that its author was a weak-minded creature. It is little more than a gossip about Cowpox without advance upon the statements of the *Inquiry*. Indeed, he sets out with the admission—

> Although it has not been in my power to extend the Inquiry into the causes and effects of the Variolæ Vaccinæ much beyond its original limits, yet, perceiving that it is beginning to excite a general spirit of investigation, I think it is of importance, without delay, to communicate such facts as have since occurred, and to point out the fallacious sources from whence a disease resembling the true Variolæ Vaccinæ might arise, with the view of preventing those who may inoculate from producing a spurious disease; and further, to enforce the precaution suggested in the former Treatise on the subject, of subduing the inoculated pustule as soon as it has sufficiently produced its influence on the constitution. (P. 69.)

* *Further Observations on the Variolæ Vaccinæ.* By Edward Jenner, M.D., F.R.S. London, 1799. 4to pp. 73. Reprinted with the third edition of the *Inquiry* in 1801, to which edition my references apply.

† Baron's *Life of Jenner*, vol. i. p. 322.

Sometimes when it is objected that the evidence adduced in the *Inquiry* was hastily collected, meagre and inconclusive, it is replied, "Yes, but recollect, it was merely a selection, if a poor one, from the author's stores"—a reply which Jenner thus renders nugatory in recording—

> My late publication contains a relation of *most of the facts which had come under my own inspection at the time it was written,* interspersed with some conjectural observations—(P. 70)—

Which is exactly what any perspicacious reader would infer from the cases adduced in the *Inquiry.* They were Jenner's best and his all. Meanwhile, as observed, he had been able to do little in extension of the Inquiry; but if idle and helpless, Dr. Pearson had been active—

> Since then Dr. George Pearson has established an inquiry into the validity of my principal assertion, the result of which cannot but be highly flattering to my feelings. It contains [Pearson's *Inquiry*] not a single case which I think can be called an exception to the fact I was so firmly impressed with—that the Cowpox protects the human body from the Smallpox. (P. 70.)

Here we have a distinct mis-statement. It was not Jenner's "fact" that Cowpox protected the human body from Smallpox—that was a widespread superstition. His contribution to the question was a definition of the Cowpox effective against Smallpox, namely Horsegrease Cowpox, other Cowpox being adjudged spurious. Pearson so far from confirming Jenner's position, deliberately set it aside. He not only accepted the rural faith in Cowpox (which Jenner knew to be unwarrantable), but, when he proceeded to practice, made use of Cowpox which owed nothing to Horsegrease. If therefore Pearson's procedure was "highly flattering" to Jenner's feelings, he was either easily pleased, or an adept in dissimulation.

The truth is, the publication of *Further Observations* was designed by Jenner to loosen himself from what was definite in the *Inquiry,* so that he might be able to appropriate whatever might result from the investigations and experiments then going on. He had defined

prophylactic Cowpox as Horsegrease Cowpox, but Horsegrease did not meet with favour, nor appear likely to answer; and it might be expedient to drop it; and thus he described the ground of his attachment to that form of specific—

Firstly.—I conceived that Horsegrease was the source of Cowpox from observing that where the Cowpox had appeared among the dairies here [Berkeley] (unless it could be traced to the introduction of an infected cow or servant) it had been preceded at the farm by a Horse diseased in the manner described, which Horse had been attended by some of the milkers.

Secondly.—From its being a popular opinion throughout this great dairy country, and from its being insisted on by those who here attend sick cattle.

Thirdly.—From the total absence of the disease in those countries where the men servants are not employed in the dairies.

Fourthly.—From having observed that morbid matter generated by the Horse frequently communicates, in a casual way, a disease to the human subject so like the Cowpox, that in many cases it would be difficult to make the distinction between one and the other.

Fifthly.—From being induced to suppose from experiments, that some of those who had been thus affected from the Horse resisted the Smallpox.

Sixthly.—From the progress and general appearance of the pustule on the arm of the boy whom I inoculated with matter taken from the hand of a man infected by a Horse; and from the similarity to the Cowpox of the general constitutional symptoms which followed. (P. 91.)

The boy inoculated with secondary Horsegrease was Baker, Case xviii. of the *Inquiry*. He died of fever in the parish workhouse before he could be subjected to the variolous test.

Jenner's drift in the foregoing propositions was obviously to lighten his responsibility for the advocacy of Horsegrease as the origin of Cowpox; but in doing so he deprived himself of any vestige of claim as a discoverer. Cowpox and Horsegrease as preventives of Smallpox were in common repute; but their combination as Horsegrease Cowpox was supposed by some to be Jenner's peculiar specific. "Not so," he said. "It is the popular opinion throughout the country that Cowpox is begotten of Horsegrease;" and proceeded to justify his prescription

by the popular authority. He produced a letter from Parson Moore of Chalford Hill to prove how in November, 1797, his Horse had the Grease, with which his boy-servant infected the Cow, which in turn infected the lad with Cowpox, although eighteen months before he had been inoculated, and severely too, with Smallpox; the parson adding—

> I am firmly of opinion that the disease in the heels of the Horse, which was a virulent Grease, was the origin of the Servant's and the Cow's malady. (P. 94.)

To the objection that attempts to raise Cowpox from Horsegrease had, so far, proved failures, Jenner replied—

> The experiments published by Mr. Simmons of Manchester and others on the subject, with the view of refuting the origin of Cowpox in Horsegrease, appear to have but little weight, as even the Cowpock Virus itself, when repeatedly introduced into the sound nipples of Cows by means of a lancet, was found to produce no effect. (P. 93.)

Having reached this point, I would beg the reader to pause and ask, What was Jenner's discovery? It was not Cowpox; it was not Horsegrease; it was not Horsegrease Cowpox; all of which by his own admission were recognised by those familiar with them as preventives of Smallpox. What was it then?

Nothing is more conspicuous in the *Further Observations* than the condition of ignorance and imbecility they reveal. As we have seen, critics of the order of Mr. John Simon represent Jenner's *Inquiry* as a Masterpiece of Medical Induction, the fruit of thirty years of incessant thought, observation and experiment; whilst the patience, the caution, and the modesty of the author are commended for imitation. Those who have been subjected to Mr. Simon's homily cannot but suffer disenchantment when they come face to face with the facts. Not after his thirty years of asserted research could Jenner answer the simple question, What is Cowpox? Incredible as it may appear, the following was his deliverance in presence of the doubts excited by the discussion of his original communication—

To what length pustulous diseases of the udder and nipples of the Cow may extend, it is not in my power to determine; but certain it is, that these parts of the animal are subject to some variety of maladies of this nature; and as many of these eruptions (probably all of them) are capable of giving a disease to the human body, would it not be discreet for those engaged in this investigation to suspend controversy and cavil until they can ascertain with precision what *is* and what *is not* the genuine Cowpox? Until experience has determined which is the *true* Cowpock, and which is *spurious*, we view our object through a mist. (P. 73.)

Consider this declaration after thirty years of incessant thought, observation and experiment! The Masterpiece of Medical Induction with the essential fact undetermined! The discovery undiscovered! And the reputed discoverer sitting ready to appropriate any praise or profit from the execution by others of his proper business! Was there ever such an exhibition of self-satisfied futility?

Among the gossip adduced to show that the country folk called eruptions Cowpox that were not Cowpox, we learn that the affection induced by Horsegrease was thus designated—

From the similarity of symptoms, both constitutional and local, between the Cowpox and the disease received from the morbid matter generated by a Horse, the common people in this neighbourhood, by a strange perversion of terms, frequently call it the Cowpox. (P. 95.)

Wherefore, he argued, many thus affected may fancy themselves secure from Smallpox, supposing they have suffered Cowpox, when they have undergone nothing but Horsegrease; and in the event of incurring Smallpox, would bring discredit on the virtue of true Cowpox. How easy it was to confound the two diseases, he illustrated from the case of William Morris, a servant, aged 32, who applied to him on 2nd April, 1798—

His symptoms and the sores on his hands were so exactly like the Cowpox, that I pronounced he had taken the distemper from milking Cows. He assured me he had not milked a Cow for more than half a year, and that his master's Cows had nothing the matter with them. I then asked him if his master had a Greasy Horse, which he answered in the affirmative; and further said,

that he had constantly dressed him twice a day for the last three weeks or more, and remarked that the smell of his hands was much like that of the Horse's heels. (P. 97.)

Thus Horsegrease sores so simulated those of Cowpox, or of Horsegrease Cowpox, as to be indistinguishable from them. At this time it was Jenner's opinion that Horsegrease, *per se*, afforded no protection from Smallpox: it had to pass through the Cow to acquire its sovereign efficacy. The opinion is noteworthy in view of its absolute surrender at a later period, when the virus from the Horse's heel came to be described by him as "the true and genuine life preserving fluid," and was used by him for inoculation without any reference to the Cow.

One of the aims of *Further Observations* was "to enforce the precaution of subduing the inoculated pustule as soon as it had sufficiently produced its effect on the constitution." True Cowpox, according to Jenner, was a serious affection. "The sores ate into the flesh." (P. 77.) They were capable of producing violent effects. They were attended with erysipelas. "They closely resembled Smallpox of the confluent sort." (P. 111.) To prolong such suffering he considered useless, for the virus conferred its protective influence on the constitution as soon as received—

The symptoms which (as in the accidental Cowpox) affect the patient with severity, are entirely secondary, excited by the irritating processes of inflammation and ulceration; and it appears to me this singular virus possesses an irritating quality of a peculiar kind; but as a single Cowpox pustule is all that is necessary to render the variolous virus ineffectual, and as we possess the means of allaying the irritation, should any arise, it becomes of little or no consequence. (P. 110.)

The means for allaying the irritation were mercurial ointment, acetate of lead, caustic potash, or any suitable escharotic—

After the pustule has duly exerted its influence, I should prefer the destroying it quickly and effectually to any other mode. The term caustic to a tender ear (and I conceive none will feel more interested in this Inquiry than the anxious guardians of a nursery)

may sound harsh and unpleasing, but every solicitude that may arise on this account will no longer exist when it is understood that the pustule in a state fit to be acted upon is then quite superficial, and that it does not occupy the space of a silver penny. (P. 104.)

I would not, however, recommend any application to subdue the action of the pustule until convincing proofs had appeared of the patient having felt its effects for at least twelve hours. No harm indeed could ensue were a longer period to elapse before the application was made use of. In short, the pustule should be suffered to have as full an effect as it could, consistently with the state of the arm. (P. 109.)

Horsegrease annoyed Pearson—it was like to damn the whole thing; and this treatment of the Cowpox pustule was scarcely less objectionable to him and to Woodville.* It gave the public, they thought, a sense of the virulence of Cowpox that was wholly unwarrantable; and they did not stay to consider whether what Jenner called Cowpox in Gloucestershire and what they called Cowpox in London were the same virus. Jenner's virus was Horsegrease Cowpox; Pearson and Woodville's was Cowpox; and such being the case, the diversity of symptoms might have been accounted for. Anyhow, the difference between Jenner and Pearson and Woodville, as to a detail so elementary, shows in what an unfinished condition the Cowpox prescription was shot upon the world, and affords a curious commentary on the Masterpiece of Medical Induction, the fruit of thirty years of incessant thought, observation and experiment. At the same time we have to do Jenner the justice of allowing that at this date, 1799, he made no pretence to a finished Masterpiece, but ingenuously ascribed the prevalent uncertainty to "the present early stage of the Cowpox Inquiry; for early," he wrote, "it must be deemed." (P. 115.) Early it was: not a point firmly determined: the reverse of what might have been expected after thirty years of incessant thought, observation and experiment.

* Baron's *Life of Jenner*, vol. i. p. 315.

CHAPTER VII.

OPERATIONS IN LONDON, 1800.

DR. PEARSON was the chief actor in the formation of—

The Institution

for the Inoculation of the Vaccine Pock,

Warwick Street, Charing Cross.

Founded 2nd December, 1799.

In April, 1801, the Institution was removed to a more commodious house, 5 Golden Square. It was the first establishment of the kind in the world. In the conspectus of the Institution it was stated—

Of above 4000 persons who have had the inoculated Cowpock one only has died. There is, however, good ground for believing that the proportional mortality will be even less than here stated.

Not a single well-attested instance has been produced among more than 2000 inoculated with Cowpock, and subsequently with Smallpox, of the Smallpox being taken, although many were exposed to the infectious effluvia of that disease. Traditionally the fact is established from time immemorial that after Cowpox there is no Smallpox.

It may be fairly affirmed, that the inoculated Cowpock is generally a much slighter disease than the inoculated Smallpox; and that the proportion of severe cases in the latter is to the former as at least ten to one.

It does not appear the genuine Vaccine Pock can be propagated like the Smallpox by effluvia from persons labouring under it. Hence if the Vaccine Inoculation should be universally instituted in place of the Smallpox, it is reasonable to conclude, that this most loathsome and fatal malady will be extinguished; and, like the Sweating-Sickness, the Plague, certain forms of leprosy, etc., be known in this country only by name.

It does not appear that the Vaccine Poison, like that of the Smallpox, can be conveyed so as to produce the disease indirectly from diseased persons, by adhering to clothes, furniture, bedding, letters, etc. Hence no danger of its propagation in these channels is to be apprehended from the universal practice of the inoculation of the Cowpock.

It has been found that a person, whose constitution has distinctly undergone the Vaccine Disease, is in future insusceptible of the same disorder. [*Thus re-vaccination was treated as impossible.*]

Experience shows, that there is no reason to apprehend the smallest chance of deformities of the skin from the Vaccine Inoculation.

The extensive practice of the Vaccine Inoculation in the present year, and the accounts of the disease in the casual way do not show that any other disease will be excited subsequently.

A further considerable public benefit expected is, that a stock of efficacious Vaccine Matter, *free from contamination by the Small-pox*, will by this Institution be preserved for the use of the public.

These statements are interesting as showing how early the rollicking tunes were set to which at this day we are expected to dance. The last paragraph is noteworthy as a confession under Pearson's hand that vaccine poison had got confused with variolous, and that the mistake would henceforth be avoided. Jenner maliciously and persistently used this mishap, for which Woodville was responsible, to discredit Pearson and magnify his own pretensions; but, as Pearson observed, neither Jenner nor any one else knew that it was possible to have cow-pox and smallpox simultaneously. The mistake was made, however; and, as is the function of mistakes, knowledge was enlarged. Pearson's behaviour in the matter was as creditable to him as Jenner's was otherwise.

The Vaccine Pock Institution was organised with a staff of physicians, surgeons, and apothecaries of the highest London respectability; and as it was desired to have the benefit of Jenner's name (his active co-operation, as a resident in Gloucestershire, being out of the question) Pearson wrote to him—

LONDON, *10th December, 1799.*

We have made some progress in the institution of a charity for inoculating the Vaccine Pock. I do not know that I can confer any honour on you by proposing you (if I am able) to the directors of our establishment, nor do I well know what to propose to you. It occurs to me that it might not be disagreeable to you to be an extra corresponding physician.

No expense will be attached to your situation except a guinea a year as a subscriber; and indeed I think you ought to be exempt from that, as you cannot send any patients: but you may depute some proxy in town.

I confess I was surprised that you neither called nor sent for me for the last *two* months you were in town. However, if it was because you were too much occupied, I certainly excuse you.

The invitation was given stiffly, from duty more than inclination. Pearson knew very well why Jenner, furious with jealousy, had kept away from him; and he was thus answered—

BERKELEY, *17th December, 1799.*

SIR,—I received your letter of the 10th instant, and confess I felt surprised at the information it conveys.

It appears to me somewhat extraordinary that an institution formed upon so large a scale, and that has for its object the inoculation of the Cowpox, should have been set on foot and almost completely organised without my receiving the most distant intimation of it. The institution itself cannot, of course, but be highly flattering to me, as I am thereby convinced that the importance of the fact I imparted is acknowledged by men of the first abilities. But at the same time allow me to observe that if the Vaccine Inoculation, from unguarded conduct, should sink into disrepute (and you must admit, Sir, that in more than one instance has its reputation suffered) I alone must bear the odium. To you, or any other of the gentlemen whose names you mention as filling up the medical departments, it cannot possibly attach.

At the present crisis I feel so sensibly the importance of the business that I shall certainly take an early opportunity of being in London. For the present I must beg leave to decline the *honour* intended me.—I remain, Sir, your obedient Servant,

E. JENNER.*

Pearson's reply to this absurd and thoroughly Jennerian letter does not appear. He might have thanked Jenner for having drawn his attention to cowpox, and have proceeded to point out that beyond that service he and his friends owed him nothing, nor in anywise admitted his guardianship. Their practice was at complete variance with his teaching. He had prescribed horsegrease cowpox in which they had no faith, having tried to produce it in vain. On the other hand, they were operating with cowpox *per se*, which he had condemned as useless, being attended with no erysipelas or constitutional effect; and that working with this condemned cowpox, they found themselves producing a much milder disease, and were under no necessity of following his advice and destroying the pustule formed at the point of inoculation with escharotics; adding, that if they had been bound to his

* Baron's *Life of Jenner*, vol. i. p. 360.

horsegrease and caustics, they would have made no progress with the public whatever.

Vaccine Inoculation might be good for mankind, but it was to be something better for Edward Jenner. There was not the least reason, outside his jealousy and rapacity, why he should not have congratulated Pearson on his enterprise and promised his assistance. As to claiming the guardianship of Vaccine Inoculation, it was preposterous: it had passed wholly beyond his control. It was Pearson's complaint that Jenner never did anything useful after the publication of *The Inquiry*. He left to others the discovery of virus, and the labour and responsibility of experimenting, and only appeared on the scene when there was some disaster whereat he could play the part of superior person, whilst insisting that all supposed improvements and successes should be assigned to his credit.

Jenner is all-in-all in the vaccinators' hagiology, but he holds the place at the cost of justice to Pearson and Woodville. To prove that I am not making a fanciful assertion, let me cite unprejudiced contemporary evidence. Dr. Paterson of Montrose in a communication to the *Medical and Physical Journal*, dated 25th May, 1801, observed—

> While we are irresistibly led to join the wondering, the grateful throng, in paying the just tribute of applause to Dr. Jenner, the immortal discoverer, we must, at the same time, confess how much we are indebted to the ingenious and benevolent Dr. Pearson for bringing, in such a handsome manner as he did, the business before the public; thereby exciting, all at once, a universal, an unparalleled quest of investigation, and furnishing, by innumerable and satisfactory experiments, a complete confirmation of the noble discovery.

Here, we may observe afresh, that Pearson did not confirm Jenner's "noble discovery." On the contrary, his use of cowpox was at distinct variance with Jenner's prescription of horsegrease cowpox, and with his condemnation of cowpox. Jenner, as we shall see, followed Pearson: Pearson did nothing to confirm Jenner.

Woodville lent his powerful influence as head of the Smallpox Hospital to establish the New Inoculation.

He put Jenner's prescription to the test with perfect sincerity and admirable courage, suffering himself to be thrice inoculated with horsegrease in order to come at the truth;* and only resorted to cowpox when he found horsegrease cowpox unattainable. Mr. Anthony Highmore, surgeon, speaking over Woodville's grave in 1805, exclaimed—

> Who that have felt the benefits of Vaccination will not teach their children, and their children's children, to bless the name of Woodville when they bless the name of Jenner.

Yet Pearson and Woodville, who made the New Inoculation practical and practicable, were pursued by Jenner with implacable animosity, stigmatising their mishaps and appropriating their apparent successes.

To publish a pamphlet for the detraction of Woodville, and if possible to upset Pearson's Vaccine Pock Institution, Jenner left Berkeley for London on 28th January, 1800, taking Bath on his way, where also a Vaccine Pock Institution was in progress.

Early in 1800 appeared *A Continuation of Facts and Observations relative to the Variolæ Vaccinæ*—a quarto of 40 pages, Jenner's third pamphlet. Like its predecessor, a trumpery collection of gossip, it was designed to manifest his advantage over Woodville, who had inadvertently confused cowpox with smallpox in his inoculations at the Hospital.

First, Jenner expressed satisfaction over the interest of Europe in Cowpox Inoculation—

> I have the pleasure, too, of seeing that the feeble efforts of a few individuals to depreciate the new practice are sinking fast into contempt beneath the immense mass of evidence which has risen up in support of it.

He then went on to describe the accumulating mass of evidence—

> Upwards of six thousand persons have now been inoculated with the virus of Cowpox, and the far greater part of them have since

* *Rees's Cyclopædia*, vol. 38. London, 1819. The writer of the article himself inoculated Woodville with the Grease.

been inoculated with that of Smallpox, and exposed to its infection in every rational way that could be devised, without effect.

"True," Pearson might have observed, "but who inoculated the vast majority of the six thousand? Nor were they inoculated with the horsegrease cowpox you prescribed, but with the cowpox you condemned."

The introductory reference to Woodville revealed Jenner's disposition and tactics—

It was very improbable that the investigation of a disease so analogous to the Smallpox should go forward without engaging the attention of the Physician of the Smallpox Hospital in London.

Accordingly, Dr. Woodville, who fills that department with so much respectability, took an early opportunity of instituting an inquiry into the nature of the Cowpox. This inquiry was begun in the early part of 1799, and in May, Dr. Woodville published the result, which differs essentially from mine in a point of much importance. It appears that three-fifths of the patients inoculated were affected with eruptions, for the most part so perfectly resembling the Smallpox, as not to be distinguished from them. On this subject it is necessary that I should make some comments.

Woodville, whose experiments were as a hundred to one of his patronising critic, and informed with purpose too, must have received this languid commendation of his country acquaintance with some surprise, if not with fierier sentiment. Jenner as an investigator was never of much account. Of what constitutes scientific demonstration, he had little perception. Incapable and indolent, he nevertheless was ambitious, and had the craft to appropriate the research of others, and with assurance so ineffable that even the plundered fell under the persuasion that what he took was somehow his own. For example, the occurrence of smallpox and cowpox simultaneously in Woodville's practice, which he had not foreseen, nor could any foresee, he first used as a pretext for lofty reprehension toward Woodville, and then converted into evidence of his own prescience, saying—

In my first publication I expressed an opinion that the Smallpox and the Cowpox were the same disease under different modifications. In this opinion, Dr. Woodville has concurred. The axiom of the immortal Hunter, that two diseased actions cannot take place at the same time in one and the same part, will not be injured by the admission of this theory.

Mark the adroit oblivion and the adroit attachment. It was horsegrease that he assumed to be the origin of smallpox through cowpox; and the cowpox used by Woodville was Jenner's condemned cowpox, underived from the horse; yet the inconvenient was passed over, and the convenient assumed!

Possibly cowpox and smallpox are forms of the same disease: possibly they are not: possibly all diseases are forms of one disease: possibly they are not: but whatever the fact, Jenner had not an iota of evidence to adduce for his conjecture that grease in horses, and pox from that grease in cows, was a modification of smallpox in men.

As we review these early days of the New Inoculation, nothing so stirs regret as what appears to have been the wilful shutting of men's eyes to facts—to notorious facts. It was well known in Gloucestershire, that whilst the vulgar supposed that cowpox prevented smallpox, it did not do so. Indeed, it was under stress of this knowledge that Jenner rejected cowpox *per se* for horsegrease cowpox. In the *Gloucester Journal* of 9th May, 1799, Mr. C. Cooke wrote—

> I not only very much doubt that the Cowpox is a permanent preventive of Smallpox, but I am confirmed in this opinion by occurrences in my own practice, by conversing with many medical men on the subject, and by Dr. Beddoes, who writes, "I have a case where the Smallpox was taken after the Cowpox had been twice gone through."*

Yet in presence of such testimonies, which were neither examined nor exploded, Jenner prophesied in this strain—

> Some there are who suppose the security from the Smallpox obtained through the Cowpox will be of a temporary nature. This supposition is refuted, not only by analogy with respect to diseases of a similar nature, but by incontrovertible facts, which appear in great numbers against it. A person had the Cowpox 53 years before the Smallpox was tried upon him, and as he completely resisted it, I conceive every reasonable mind must be satisfied that he was secure from the disease during the intervening time.

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* Mr. Cooke's letter was reprinted in the *Medical and Physical Journal*, vol. i. p. 322. London, 1799.

Such was the evidence that he thought should satisfy every reasonable mind! How did he know that the said person had cowpox 53 years before, or had the right sort of cowpox, and in the right way? Inoculation with smallpox was continually unsuccessful (without reference to cowpox as cause of failure) and especially among elderly folk. When, however, there is a disposition to believe, the most indifferent reasons serve for conviction.

Cowpox and Smallpox, said Jenner, were modifications of the same disease; and Smallpox, whether contracted or inoculated, was a well-known excitant of scrofula; and Jenner was inclined to consider it probable that "the general introduction of the Smallpox into Europe had been among the most conducive means in exciting that formidable foe to health." Then, it might be said, Cowpox as a modification of Smallpox must be liable to the like objection. "Not at all!" protested the smooth-spoken adventurer. "The diseases are the same, but unlike in the excitation of scrofula"—

> Having attentively watched the effects of the Cowpox in this respect, I am happy in being able to declare, that the disease does not appear to have the least tendency to produce this destructive malady.

Considering his limited experience, the asseveration as to the non-excitation of scrofula was sheer quackery, and of a piece with the wilder assurance that follows. In 1798 he had set forth cowpox as a useful alternative to smallpox for inoculation; but in 1800 the claim was thus magnified—

> When scrutiny has taken place, not only among ourselves, but in the first professional circles in Europe, and when it has been uniformly found in such abundant instances—
>
> *That the Human Frame when once it has felt the influence of the genuine Cowpox is never afterwards, at any period of its existence, assailable by the Smallpox,*
>
> May I not with perfect confidence congratulate my country and society at large on their beholding in the mild form of the Cowpox, an antidote that is capable of extirpating from the earth a disease which is every hour devouring its victims; a disease that has ever been considered as the severest scourge of the human race!

It is unnecessary to discuss these wild words—it is sufficient to record them as evidence of what it was possible to assert in the year 1800—and assert, too, whilst as yet the Cowpox that was to work the miracle was one thing in the hands of Jenner, and another in those of Pearson and Woodville!

The pamphlet published, Jenner's other business in London was to undermine the institution for Vaccine Pock Inoculation. He went about insinuating and protesting that its founders and officers neither knew what was true Variolæ Vaccinæ, nor how to use it; that not only were they ignorant, but perverse; and that the immeasurable blessing he had been the means of conveying to mankind would never be rightly enjoyed until there was an Institution with Edward Jenner for its guide and director.

In playing this game Jenner had facilities and advantages. No one, not Pearson himself, contested his position as advertiser of the New Inoculation, and to the public he was its representative. He had attempted nothing and had no mishaps to account for: these attached to Woodville and other credulous and active experimenters.

Moreover he had no awkward information to contend with in those he addressed—they listened, were informed, were convinced. Jenner's conduct at this juncture, in relation to Pearson and Woodville, has been stigmatised as mean, thankless, despicable. These be hard words. His tactics were the common tactics of men in whom self-love is predominant, and we have not the strength for the use of the appropriate epithets with the frequency that experience requires.

The poor were the chief sufferers from smallpox, and under the name of the poor Jenner advanced his project. He drew up the following memorandum, which he submitted to the Earl of Egremont, and circulated privately—

PROPOSAL FOR A PUBLIC INSTITUTION FOR VACCINE INOCULATION.

Having now pursued the inquiry into the nature of the Cowpox to so great an extent as to be able positively to declare that those who have gone through this mild disease are rendered perfectly secure from the contagion of the Smallpox; and being convinced

from numberless instances that the occupations of the mechanic or the labourer will meet with no interruption during its progress, and the infected and uninfected may mingle together in the most perfect safety, I conceive that an Institution for the Gratuitous Inoculation of the lower classes of society in the Metropolis would be attended with the most beneficial consequences, and that it might be so constituted as to diffuse its benefits throughout every part of the British Empire.

EDWARD JENNER.

London, 16th March, 1800.

Then followed a scheme of the Institution, including "a Physician to be appointed to superintend the medical department."

Whether from Jenner's practical inefficiency, or because the time was not ripe, or because those who were more actively interested in cowpox were satisfied with Pearson's Institution, the project lay in abeyance till 1803. He took nothing ostensibly by his intrigue save the withdrawal of the names of the Duke of York and Lord Egremont from the patronage of the existing establishment.

Meanwhile Pearson continued to operate with unabated energy, and his Institution became a recognised centre of inquiry, advice, and supply. It was designed, as he wrote, "1st, to be useful to the poor; but it had other objects, to wit, 2ndly, to ascertain the laws of the new poison for the extinction of smallpox; and 3rdly, to serve as a public office for the supply of the world with virus until supplies should become unnecessary." One of the most flattering applications was received by Pearson from the French Consulate on 5th April, 1800. In a reply, dated 12th May, signed by the staff of the Institution, it was said—

We are not surprised that you have not yet found the disease among the cows of France, it being on the whole a rare disease in England; nor are we surprised at your want of success with the matter sent to you, because from experience we know that it very frequently fails, unless used immediately from the subject.

Vaccine matter may be conveyed in various ways: we have sent it to you in three, namely, on threads, on lancets, and on glass.

If you try the matter sent on thirty patients immediately, we think you cannot fail to excite the disease in some of them, and then you will please to preserve the succession by inoculation as

we do in England, having had no fresh matter from the cow since January and February of last year, 1799.

The Frenchmen failed again with this virus, but Dr. Woodville soon after went to Paris, and effected what was desired.

Cow-Pock Dispensaries were opened in various towns throughout England, Bath and Manchester perhaps having the lead; and an Address to the Poor was drawn up as a common form to be issued from such Dispensaries. In a copy of this Address, widely circulated in and around Manchester in 1800, we read—

The experience of several years has fully proved that inoculation for the Cowpox is *a certain preservative* against the Smallpox; and is, besides, so mild and safe a disorder, when compared with the inoculated Smallpox, that it has been generally introduced among the better informed and more wealthy inhabitants, both of this kingdom and of various parts of Europe.

Inoculation for the Cowpox has been practised for several years [*less than three*] with constant success, in various parts of the Kingdom.

It has never failed to prevent the infection of the natural Smallpox.

It may be communicated with safety to persons of every age and sex, and at all times and seasons of the year, with equal advantage.

It does not produce eruptions, which scar and disfigure the face; and it is seldom, if ever, attended with any other marks of the disease than what appear on the arms from inoculation.

So far from proving hurtful, delicate and sickly children are often improved in health by having passed through this complaint.

Scarcely any remedies or attendance are required for the Cowpox, nor is there any necessity for a course of physic before or after the inoculation.

The prejudices of the poor against inoculation for the Smallpox, by which thousands of lives have been annually saved,* have been often lamented; but if they suffer unjust prejudices to prevent their laying hold of the advantages now offered to them by the inoculation of the Cowpox, they will neglect the performance of a duty they owe to themselves, to their families, and to society at large. For surely it is little less than criminal to expose their helpless children to the attack of so terrible and fatal a malady as Smallpox when it

* By and by controversy with the Smallpoxers waxed hot, and then the Cowpoxers averred that thousands of lives were annually *lost* by their practice.

may be readily avoided by the inoculation of so mild, simple, and safe a disease as that of the Cowpox.

N.B.—All poor persons, whose affection for their families leads them to embrace this favourable opportunity, may have their children inoculated for the Cowpox at the Hospital and Dispensaries every day in the week (Sunday excepted) throughout the year. No time ought to be lost by the poor in freeing their families from the apprehension of the Smallpox, *which daily increases in frequency and malignity throughout this town.*

This manifesto is an illustration of the unscrupulous and unwarrantable assertions with which the New Inoculation was introduced to the world. There is no question that many who were active in circulating these mendacities did so honestly, justified, as they thought, by medical authority. What is marvellous is the survival of the primitive fictions to the present day. It would seem that when the human mind acquires a certain *set*, something like a surgical operation is requisite to reverse it.

We shall now see how the New Inoculation obtained this sudden popularity — a popularity so sudden that opposition had not time to organise itself. There were protests, and some raillery. In the *Gentleman's Magazine* for August, 1799, we find a correspondent saying—

There is a plan to mitigate Smallpox in the human species by passing it through a Cow. Now as everyone is not in possession of a Cow, I propose to pass it through animals that most people possess. I mean Cats; and I shall call it the Catpox. When my plan is matured, the ingenious shall hear further concerning it.

And Pearson writing in 1802, when the success of cowpox appeared secure, observed—

How the new practice was sneered at by some: how it was reprobated as a gross and mischievous imposition: how it was stigmatised with the appellation of the Gloucestershire bubble: and how the Inquirers were considered by many persons as fit candidates for a certain asylum: to say nothing of the villainous jests made on the occasion, are recent in our memory.*

* *Examination of Report of Committee of House of Commons.* London, 1802.

CHAPTER VIII.

TRIUMPH OF THE NEW INOCULATION.

THE House of Hanover has been reproached for indifference to literature, science and art, but an exception might be asserted on the score of variolous and vaccine inoculation. It was Caroline, Princess of Wales, who in 1721 promoted Maitland's experiments; and Jenner found none so ready to hear and believe as George III. and his family. His first convert was the Duke of Clarence, subsequently William IV. The Duke's surgeon happened to be Francis Knight, who had lived in Wilts and Gloucestershire, and was familiar with the country faith in cowpox, and received Jenner's communication with a ready mind. In 1799 Knight was allowed to operate upon the Duke's children by Mrs. Jordan, and the fact was noised abroad and passed to Jenner's credit. Nor was the Duke's service limited to this example. He made Jenner's acquaintance, listened to his stories, and became his active partizan. Then the Duke of York, commander-in-chief of the army, was convinced, and enforced the new practice to the full extent of his power. He, moreover, acted as patron of the Vaccine Pock Institution until he was persuaded that Pearson, its founder, was injurious to Jenner. On 7th March, 1800, Jenner was presented to George III. at St. James's Palace, and delivered *The Inquiry* bound in crimson to his majesty, who was pleased to accept the dedication of the second edition. On the 27th he had an interview with Queen Charlotte, who conversed about the new specific with all the curiosity of a grand-motherly quack. The Prince of Wales followed suit; and Jenner found himself invested with the full effulgence of the royal favour. It was a magical success; for, consider, not two years had elapsed since the publication of *The Inquiry.*

Jenner naturally became very popular. He wrote to Mr. Shrapnel—"I have not yet made half my calls in

town, although I fag from eleven till four;" and, "Pray tell Tierney how rapidly the Cowpox is marching over the metropolis, and indeed through the whole island. The death of three children under inoculation with small-pox will probably give that practice the Brutus-stab."

With little ability to make and maintain ground, Jenner, like many feeble folk, had the faculty of converting those he called his friends to his private advantage. He did not subdue them by will, but by weakness. Indeed, whoever chooses to observe will often have to mark with amaze how stronger natures suffer their means and energies to be appropriated by inferior organisms, and used with the thanklessness of rightful possession.

John Ring was a remarkable instance of this sort of possession. He was a surgeon in New Street, Hanover Square, London. In 1799 he entered into correspondence with Jenner, and his interest in cowpox and its advertiser developed into an enthusiasm without qualification by weariness or fear. Whatever Jenner asserted he swore to; whatever charge was brought against the New Inoculation he denied. He was ready for all comers with such voluble and hearty vigour that his outrages on propriety were laughed at and excused as "John Ring's way." Among his earlier services was the preparation of the Testimonial in favour of the New Inoculation which he carried from house to house and obtained the signature of nearly every London physician and surgeon of distinction. The Testimonial was published in the *Medical Review* and *Medical Journal* for July, 1800, and was reprinted in the newspapers. It ran as follows —

Many unfounded reports have been circulated, which have a tendency to prejudice the public against the Inoculation of the Cowpox: we, the undersigned physicians and surgeons, think it our duty to declare our opinion, that those persons who have had the Cowpox are perfectly secure from the future infection of the Smallpox, provided the infection has not been previously communicated.*

* Meaning thereby, as happened under Woodville at Battle Bridge Hospital where Smallpox and Cowpox were incurred simultaneously.

We also declare that the inoculated Cowpox is a much milder and safer disease than the inoculated Smallpox.

The first signatures comprised thirty-two physicians and forty surgeons, and the example being set, others hastened from town and country to record their adhesion. "I feel proud," wrote Mr. Witham in sending his name, "that my little bark may, with others more illustrious,

Attendant sail,
Pursue the triumph, and partake the gale."

The Testimonial had great effect on the public mind: to the majority it was irresistible. As Ring said, "It confounded the enemies of the new practice"—adding in his characteristic vernacular, "and it secured the triumph of reason over the scruples of prejudice and ignorance, and the base manœuvres of sordid and self-interested men."* Thus early was it discovered that an opponent of Vaccination was an ignoramus or a rascal. Ring's easy arrogance is concisely illustrated in this deliverance—

It is no want of candour to affirm that those who are hostile to Vaccine Inoculation, are total strangers to it; those who are doubtful, are almost total strangers to it; and I defy the whole world to produce one single instance of a person that has had any experience of the disease, who is not a decided friend to the practice.†

Jenner recognised his thorough-going supporter, and used his loyalty to strike at Pearson and others who failed to abide in like subservience. He wrote to a foreign physician—

The discovery which I had the happiness to announce to the world is much indebted to Mr. Ring's ardent zeal and indefatigable exertions for the rapid progress it has made; while some of those *who vainly conceived themselves instrumental in promoting its adoption* have in reality from *their ignorance and indiscretion*, rather retarded than accelerated its progress.‡

* *A Treatise on the Cowpox containing the History of Vaccine Inoculation.* By John Ring. Part i. p. 297. London, 1801.

† *Ib.* Part ii. p. 720. London, 1803.

‡ *The Beauties of the Edinburgh Review*, alias *the Stink-Pot of Literature*. By John Ring. London, 1807. P. 49.

Wonder is frequently expressed over the rapid conversion of England and the world to Vaccination, but, as I have before remarked, wonder is much reduced when we set the circumstances clearly before us. Inoculation with smallpox to avert smallpox was the practice of the time, and it was not a universal practice simply because it was troublesome and dangerous: everybody believed in the saving rite; and where evaded it was as onerous and perilous duties are always and everywhere evaded by the indolent and cowardly. Inoculation with cowpox was introduced to the public as a substitute for inoculation with smallpox, equally efficient or more efficient, and neither troublesome nor dangerous. Thus easy and seductive was the transition from the one practice to the other. Jenner had no serious battle to fight: the contest was decided in the years during which inoculation with smallpox struggled for prevalence. The warfare that subsequently cost him so much irritation was conducted by the conservatives of Inoculation, as experience revealed the inefficiency and mischiefs of Vaccination. Resistance such as is now offered to Vaccination on physiological grounds there was none, so far as I can discover. It had apparently occurred to no one that smallpox was a consequence of the transgression of the laws of health, and was preventible by submission to those laws. It was imagined that the disease came by the will of God, or the devil, or by force of fate, and that to dodge it by medical craft was the utmost that was practicable. Unless we bear in mind these conditions of the public intelligence, we shall misapprehend the demeanour of the people who so cordially welcomed Jenner's advertisement. It is always a mistake to criticise the conduct of an earlier generation by the light of a later. We turn history to ill account when we use it to nourish our self-complacency; for the probability is that had we lived with our forefathers, we should have done exactly as they did.

Some will ask, How did it ever come to pass that so many doctors in 1800 signed Ring's testimonial certifying

that inoculation with cowpox was a sure and everlasting protection from smallpox when they had not, and could not have, any experience to warrant their assertion? True, but they had an illusory experience by which they were beguiled, namely, the Variolous Test. Hundreds were inoculated with cowpox and subsequently with smallpox, and were also exposed to smallpox contagion, and as the disease did not take, it was concluded it could never take, and that the subjects of the operation were fortified for ever. The fallacy is now manifest, but it was by no means manifest in 1800, and all manner of men received and propagated the fable with energetic sincerity. It was once admitted that a tub full of water did not everflow when a fish was slipped into it, and many explanations were current of the curious phenomenon until a sceptical spirit suggested that the experiment be tried. A like spirit might have suggested that it was expedient to wait and see whether cowpox was indeed a perpetual defence against smallpox, inasmuch as nature had an awkward habit of confuting prognostications apparently irrefragable.

The ease with which it was asserted cowpox inoculation could be performed, coupled with its harmlessness, not to say wholesomeness, and the absolute security it afforded against smallpox, induced benevolent busybodies to set up as vaccinators all over the country. What the kindly quack delights in is something cheap and handy with a touch of mystery and the promise of immeasurable advantage—conditions which the new practice completely fulfilled. The memoirs of the time, especially of the Evangelical party, abound with instances in which this good soul and that good soul had vaccinated so many hundreds or thousands, delivering them from the peril of an awful disease. Thus in the *Gentleman's Magazine*, for December, 1800, we read—

> Two respectable families near Manchester have within these few months inoculated upwards of 800 of the neighbouring poor from two months old to twenty years with uniform success. Twenty of them were subjected to the variolous test, and all were found proof against the disease.

And John Ring relates—

Dr. Jenner lately met in a large party of fashion a lady of Portman Square, who, with another lady, has inoculated 1300 in the north of England. The rural swain, when he receives the blessing of Jenner's discovery from such a fair hand, must conclude that the Goddess of Health has adopted the practice.*

Of course medical practitioners had little favour for this sort of intrusion into their domain, but Jenner encouraged and boasted himself in the domestic diffusion of the discovery. By and by when disasters became common it was found extremely convenient to ascribe them to these unskilled operators; and ultimately vaccination was resigned entirely to the legally qualified practitioner, whose failures are rarely inquired into, and when proclaimed are, as professional matter of course, explicitly denied.

Jenner after six months of lionising left London on 23rd June, 1800, and on his way home passed through Oxford where he was introduced to Dr. Marlow, Vice-Chancellor of the University, and other dignitaries, who subscribed the following testimonial, drawn up by Sir Christopher Pegge, Reader in Anatomy—

We, whose names are undersigned, are fully satisfied upon the conviction of our own observation, that the Cowpox is not only an infinitely milder disease than the Smallpox, but has the advantage of not being contagious, and is an effectual remedy against the Smallpox.

When a prophet in the country turns out a prophet in London his country neighbours begin to believe in him; and thus it was with Jenner. His metropolitan reputation was reflected in Gloucestershire. Earl Berkeley wrote to the Duke of Beaufort—

Every father of a family owes the greatest obligation to Dr. Jenner for preventing the dreadful effects of the smallpox.

And the sense of this obligation took shape in a service of plate presented in 1801 and bearing this inscription—

* *Treatise on the Cowpox*, p. 520. London, 1801.

PRESENTED BY

THE NOBILITY AND GENTRY OF

THE COUNTY OF GLOUCESTERSHIRE

TO THEIR COUNTRYMAN

EDWARD JENNER, M.D., F.R.S.

AS A TESTIMONY OF THE HIGH SENSE THEY ENTERTAIN OF THOSE EMINENT ABILITIES WHICH DISCOVERED AND THAT DISINTERESTED PHILANTHROPY WHICH

PROMULGATED

THE VACCINE INOCULATION.

CHAPTER IX.

A DISHONOURABLE TRANSFORMATION.

HONOUR was abundant, but honour is windy fare, and Jenner had an eye for something more substantial. Among his papers we read—

> While the vaccine discovery was progressive, the joy I felt at the prospect before me of being the instrument destined to take away from the world one of its greatest calamities, *blended with the fond hope of enjoying independence* and domestic peace and happiness, was often so excessive that, in pursuing my favourite subject among the meadows, I have sometimes found myself in a kind of reverie. It is pleasant to me to recollect that these reflections always ended in devout acknowledgments to that Being from whom this and all other mercies flow.*

But how was the fond hope of enjoying independence to be realised? The question was discussed by Jenner and his friends, and it was finally decided to apply to the House of Commons for a reward. But in order to go to Parliament it was necessary to have a good case, and Jenner's case was open to various objections. *The Inquiry*, published in 1798, was by no means a manual

* Baron's *Life of Jenner*, vol. i., p. 140.

of practice. Its prescription was Horsegrease Cowpox; but such Cowpox was neither producible nor accounted tolerable. Cowpox that did not originate in Horsegrease, Jenner had adjudged spurious; and yet such spurious Cowpox had been adopted by Pearson and Woodville, and under their influence had obtained extraordinary popularity. It was therefore by no means improbable that any claim for cash wherewith to enjoy independence might be seriously contested. In this strait, what was to be done? The question was a grave one, and called for a heroic solution. Resolved therefore, that Horsegrease Cowpox be dropped, and with it the use of escharotics for the subjugation of the pustules produced thereby. Absolute silence should thenceforth be his rule as to Horsegrease. So much for the negative position: the positive was more difficult. To claim Cowpox as his own, with the modes of its exhibition devised by Pearson, was an evolution full of hazard, but unless prepared to surrender "the fond hope of enjoying independence," it must be effected. He had advantages. His name was associated with the new practice: even Pearson had done him homage: neither the medical profession nor the public were likely to study the *Inquiry* critically, or to trouble their heads over obscure details: Cowpox was to them Cowpox: he had the world's ear; and opposition would be set down as the ordinary behaviour of envy toward success. Anyhow the transformation must be attempted: otherwise, farewell to dreams of financial independence.

To initiate this transformation, Jenner came to London, and in May, 1801, published a quarto pamphlet of twelve pages, entitled *The Origin of the Vaccine Inoculation.*

First it was necessary to represent that his investigations had extended over many years—a fact of which there was no sign in the *Inquiry*, the evidence indeed being distinctly otherwise; and thus he shaped his statement—

> My inquiry into the nature of the Cowpox commenced upwards of twenty-five years ago. My attention to this singular disease

was first excited by observing that among those whom in the country I was frequently called upon to inoculate, many resisted every effort to give them the Smallpox. These patients I found had undergone a disease they called the Cowpox, contracted by milking Cows affected with a peculiar eruption on their teats. On inquiry, it appeared it had been known among the dairies from time immemorial, and that a vague opinion prevailed that it was a preventive of the Smallpox. This opinion I found was comparatively new among them; for all the older farmers declared they had no such idea in their early days—a circumstance that seemed easily to be accounted for, from my knowing that the common people were very rarely inoculated for the Smallpox till that practice was rendered general by the improved method introduced by the Suttons: so that the working people in the dairies were seldom put to the test of the preventive powers of the Cowpox.

Jenner's design in the foregoing statement was manifest. It was to minimise the faith of the country folk, and to represent that by his own perspicacity he had discovered the virtue of Cowpox through his failures to inoculate with Smallpox. The inquiries of Pearson and others, however, showed conclusively that in many parts of the south of England, in Ireland, and on the Continent it was believed that to have suffered from Cowpox was to be secure from Smallpox; and the belief was entertained altogether independently of failures to inoculate with Smallpox; just as a similar belief prevailed among farriers as to the prophylaxy of Horsegrease. The faith in Cowpox was neither vague, nor new, nor confined to Jenner's neighbourhood; and his assertion to the contrary showed with what hardihood he had undertaken to construct a case in his own favour.

In opposition to the rural faith, medical men maintained that it was possible to have Smallpox after Cowpox; and surgeons averred that they had successfully inoculated many who had suffered Cowpox. Indeed it was indubitable professional testimony to this effect that compelled Jenner to forsake his first fancy for Cowpox, and to report the true specific as Horsegrease Cowpox. Having, however, to sacrifice that discovery, and revert to the Cowpox he had discredited, a fresh manœuvre was requisite; and thus was it performed—

In the course of the investigation I found that some of those *who seemed to have undergone the Cowpox*, nevertheless, on inoculation with the Smallpox, felt its influence just the same as if no disease had been communicated to them by the Cow. This occurrence led me to inquire among the medical practitioners in the country around me, who all agreed in this sentiment, that the Cowpox was not to be relied upon as a certain preventive of the Smallpox. This for a while damped, but did not extinguish my ardour; for as I proceeded I had the satisfaction to learn that the Cow was subject to some varieties of spontaneous eruptions upon her teats, that were all capable of communicating sores to the hands of the milkers, and that whatever sore was derived from the animal was called in the dairy the Cowpox. Thus I surmounted a great obstacle, and, in consequence, was led to form a distinction between these diseases, one of which only I have denominated the *true*, the others the *spurious* Cowpox, as they possess no specific power over the constitution.

Here we have the trick before us at the very point of transformation. He consulted with medical practitioners, "who all agreed that Cowpox was not to be relied upon as a certain preventive of Smallpox." True. What did he do next? He discovered that what Cowpox did not prevent, the variety derived from Horsegrease did. Such was the original revelation of 1798. In 1801 we have a different story, and his quest a different issue. Not a word about the discovery of the sure preventive in Horsegrease Cowpox—not one word! Although his ardour was damped by the medical evidence against Cowpox, he yet prosecuted his inquiry; and to his satisfaction ascertained that what the milkers called Cowpox was not always Cowpox, but that any sores whatever derived from the Cow were so designated. He therefore was led to form a distinction between the diseases, and to denominate one as *true* and the others as *spurious* Cowpox.

Thus the Horse, the obnoxious Horse, was got rid of, and the Cow represented as of herself yielding pox, which pox was the Cowpox that Pearson and Woodville (in contempt of Jenner's 1798 revelation) had brought into fashion; and which it had become all essential for Jenner to claim as his own in order to realise his "fond hope of enjoying independence."

In this connection the question occurs, Why should "some varieties of spontaneous eruptions" have been designated *spurious* Cowpox? Such eruptions were not Cowpox in any sense. Why then spurious? That Cows communicated a variety of sores to their milkers, described by them in common as Cowpox, was an assertion for which Jenner never adduced any evidence; which, too, (as we shall see) at a later date he disowned as a misapprehension. Nevertheless spurious Cowpox got the New Inoculation over many difficulties. When Smallpox, or any notable mischief, followed Cowpox it was said, "Ah! the Cowpox must have been spurious; for Smallpox, or any harm, is impossible after true Cowpox." People did not stay to inquire whether spurious Cowpox (that was to say, matter "from a variety of sores on the Cow," according to Jenner's second version) could be propagated from arm-to-arm, even if taken from the Cow by mistake. The illusory Variolous Test and the Spurious Cowpox Dodge worked marvellously for the public deception.

Another point Jenner tried to score at the cost of Pearson and Woodville. When they began to inoculate they found they had to ascertain at what period the virus should be taken from the Cow, and from the arms of the inoculated. Jenner afforded them no guidance. Writing to John Ring, 1st July, 1801, he confessed—

> In the early part of my inoculations I had not learned to discriminate between the efficacy of the virus taken at an early and at a late period of the pustule.*

Where Jenner had not learned to discriminate, the line became clear in the course of general practice; and Pearson was especially explicit as to the right time for taking virus; but to make good his claim to national consideration, Jenner fancied it necessary to exhibit himself as complete master of the art of Cowpox Inoculation, owing nothing to others; and he therefore proceeded to appropriate the fruit of the common medical experience,

* Baron's *Life of Jenner*, vol. i., p. 448.

assigning it to a season when he alone was in the field. Referring to his separation of true from spurious Cowpox, he thus prosecuted his raid—

This impediment to my progress was not long removed before another, of far greater magnitude in appearance, started up. There were not wanting instances to prove that when the true Cowpox broke out among the cattle at a dairy, the person who had milked an infected animal, and had thereby gone through the disease in common with others, was liable to receive the Smallpox afterwards. This, like the former obstacle, gave a painful check to my fond and aspiring hopes; but reflecting that the operations of Nature are generally uniform, and that it was not probable the human constitution (having undergone the Cowpox) should in some instances be perfectly shielded from the Smallpox, and in many others remain unprotected, I resumed my labours with redoubled ardour. The result was fortunate; for I now discovered that the virus of Cowpox was liable to undergo progressive changes from the same cause precisely as that of Smallpox, and that when it was applied to the human skin in its degenerated state, it would produce the ulcerated effects in as great a degree as when it was not decomposed, and sometimes far greater; but having lost its *specific properties*, it was incapable of producing that change upon the human frame which is requisite to render it insusceptible of the variolous contagion: so that it became evident a person might milk a Cow one day, and having caught the disease, *be for ever secure;* while another person, milking the same Cow the next day, might feel the influence of the virus in such a way as to produce a sore, or sores, and, in consequence of this, might experience an indisposition to a considerable extent; yet, as has been observed, the specific quality being lost, the constitution would receive no peculiar impression. . . .

This observation will fully explain the source of those errors which have been committed by many inoculators of the Cowpox. Conceiving the whole process to be extremely simple, as not to admit of a mistake, they have been heedless about the state of the Vaccine Virus; and finding it limpid, as part of it will be, even in an advanced state of the pustule, they have felt an improper confidence, and sometimes mistaken a spurious pustule for that which possesses the perfect character.

No one apparently thought it worth while to expose the fictitious character of these statements, invented by Jenner to justify his pretensions and to baffle objections. Any careful reader of the *Inquiry* of 1798, and the *Origin of Vaccine Inoculation* of 1801, cannot fail to perceive the radical inconsistency of the earlier and later

narratives, and how a few hasty experiments enveloped in unverifiable conjecture and gossip, came to be magnified into years of arduous research.

He wound up his statement with this flourish and prediction—

> The distrust and scepticism which naturally arose in the minds of medical men, on my first announcing so unexpected a discovery, has now nearly disappeared. Many hundreds of them from actual experience, have given their attestations that the inoculated Cow-pox proves a perfect security against the Smallpox; and I shall probably be within compass if I say thousands are ready to follow their example; for the scope that this Inoculation has now taken is immense. An hundred thousand persons, upon the smallest computation, have been inoculated in these realms. [May, 1801.] The numbers who have partaken of its benefits throughout Europe and other parts of the globe are incalculable; and it now becomes too manifest to admit of controversy, that the annihilation of the Smallpox, the most dreadful scourge of the human species, must be the final result of this practice.

For the end designed—to establish and exalt a claim with the purpose of exacting corresponding recompense, the *Origin of the Vaccine Inoculation* was an adroitly drawn document: its veracity is a different matter. A just man, not to say a generous, would have had some praise for Pearson, Woodville, and others to whom the extension of the New Inoculation was due; but Jenner was essentially a mean spirit; and for him to have stated his case truly would have been to jeopardise "the fond hope of enjoying independence."

CHAPTER X.

JENNER BEFORE PARLIAMENT, 1802.

JENNER was timid and indolent, and, though eager for reward, required much prompting to use the means to the end on which his heart was set. He wrote to Lord Sherborne to speak for him to Prime Minister Addington; but Sherborne replied, 23rd April, 1801, that he did not

know Addington even by sight. He would however try to see Mr. Pitt, adding for encouragement and direction—

If patriot Grattan gets £50,000 for his patriotism, the true patriot Jenner deserves more: I am sure not less; and less would be perfectly shabby to think of. I perfectly recollect Grattan's business. It was settled among his friends to propose £100,000 for him, determining to ask enough; and fearing that sum would not be granted, one of his particular friends was to get up afterwards and propose £50,000, which was immediately granted, and he took £47,500 for prompt payment.

Action had to be taken, and on 9th December, 1801, Jenner went to London to prepare a petition to the House of Commons and to canvass for support. Even at the last moment, Wilberforce had to warn him, 24th February, 1802, that no time was to be lost, or he would lose his chance for the year. After prolonged consultation with those accustomed to such business, the petition was got ready, and on 17th March, 1802, it was presented to the House of Commons.

The humble Petition of EDWARD JENNER, Doctor of Physic,
SHEWETH,

That your Petitioner having discovered that a disease which occasionally exists in a particular form among cattle, known by the name of the Cowpox, admits of being inoculated on the human frame with the most perfect ease and safety, and is attended with the singularly beneficial effect of rendering through life the persons so inoculated perfectly secure from the infection of the Smallpox.

That your Petitioner after a most attentive and laborious investigation of the subject, setting aside considerations of private and personal advantage, and anxious to promote the safety and welfare of his Countrymen and of Mankind in general, did not wish to conceal the Discovery he so made of the mode of conducting this new species of Inoculation, but immediately disclosed the whole to the public; and by communication with medical men in all parts of this Kingdom, and in Foreign Countries, sedulously endeavoured to spread the knowledge of his discovery and the benefit of his labours as widely as possible.

That in this latter respect the views and wishes of your Petitioner have been completely fulfilled; for to his high gratification he has to say that this Inoculation is in practice throughout a great proportion of the civilised world, and has in particular been productive of great advantage to these Kingdoms, in consequence of its being introduced, under authority, into the Army and Navy.

That the said Inoculation hath already checked the progress of

the Smallpox, and from its nature must finally annihilate that dreadful disorder.

That the series of experiments by which this discovery was developed and completed have not only occupied a considerable portion of your Petitioner's life, and have not merely been a cause of great expense and anxiety to him, but have so interrupted him in the ordinary exercise of his profession as materially to abridge its pecuniary advantages without their being counter balanced by those derived from the new practice.

Your Petitioner, therefore, with the full persuasion that he shall meet with that attention and indulgence of which this Honourable House may deem him worthy, humbly prays this Honourable House to take the premises into consideration, and to grant him such remuneration as to their wisdom shall seem meet.

Patriot Grattan asked for £100,000, was awarded £50,000, and took £47,500: "true patriot Jenner deserves more," said Lord Sherborne; but Jenner had not courage for the demand. What, however, was undefined in cash was made up for in pretension.

As we read Jenner's petition we note (1) the Discovery; (2) its Disclosure and Diffusion; (3) the Expense thereby incurred; and (4) the Prophecies; and under these heads it is to be observed—

1.—It was no discovery of Jenner's that cowpox was inoculable and preventive of smallpox. That was a rural superstition. Nor, be it again repeated, did he ever become responsible for that rural superstition. Recognising its futility, he deliberately set it aside, and recommended a disease of the horse, transmitted through the cow, for inoculation. It was Pearson, who disliking Jenner's prescription, brought cowpox into vogue; whereon Jenner, fearing that he might be cut out of the enterprise, dropped his specific, adopted the cowpox he had rejected, and claimed Pearson's work as the development of his own.

2.—That he disclosed his discovery was true, but it was not the discovery set forth in the petition. Moreover the merit of disclosure in such a case is measured by the advantage of concealment; and what could Jenner have taken by concealment? The conditions of successful

quackery were not present in the secret practice of inoculation with horsegrease cowpox.

3.—That the discovery occupied a considerable portion of Jenner's life, and was attended with great expense and loss of practice, is answered by reference to his *Inquiry*. With what loss of time, loss of money, and loss of practice could the series of cases therein set forth have been attended? And after 1798, he confessed he was able to achieve little further.

4.—As for the prophecies about the absolute security afforded by cowpox with the final extermination of smallpox, we may estimate the worth of such vapouring by the asserted check at that time, 1801, administered to the disease, when as yet an insignificant fraction of the population had been subjected to the New Inoculation, and a fraction, too, least likely to suffer from smallpox.

Petitions are petitions, and not designed for over-much scrutiny. In them truth is rarely to be looked for otherwise than warped to personal ends. The policy of a petition is to claim in excess with a view to obtain a larger concession. Jenner's petition was a more than usually flagrant instance of this policy, with the disadvantage that much of its untruth passed into currency as matter of fact.

The Prime Minister, Mr. ADDINGTON (afterwards Viscount Sidmouth), informed the House that he had taken the King's pleasure on the contents of the petition, and that his Majesty recommended it strongly to the consideration of Parliament. It was referred to a committee, of which Admiral Berkeley, a zealous believer in Jenner, was appointed chairman. The points to which the committee chiefly directed their inquiries were—

I.—The utility of the discovery itself.

II.—The right of the petitioner to the discovery.

III.—The sacrifices of the petitioner in making the discovery.

As an investigation the work of the Committee was illusory. The points were decided in the petitioner's favour from the outset. There was no opposition. Dr.

Moseley, Mr. Birch, and Dr. Rowley, who became active opponents of the New Inoculation, were summoned, but the matter was new to them; they had not had time to collect evidence and formulate conclusions: a rite that was to protect for a lifetime and to annihilate smallpox, announced in 1798, was to be adjudicated upon in 1802! On the other hand, Jenner's friends were influential and active, and used the opportunity to parade their whole strength in his favour. The medical testimony especially was unreserved and enthusiastic.

Dr. JAMES SIMS, president of the London Medical Society, laid before the Committee a unanimous resolution of the Society in Jenner's favour. He said he was at first adverse to Vaccine Inoculation, but his confidence in it was increasing every hour. It introduced no other disease to the human frame, whilst it made an end of the possibility of smallpox, a disease that proved fatal to one in six of those it attacked. He had never heard of Cowpox before the publication of *The Inquiry*, and regarded the discovery therein communicated as the most useful ever made in medicine. If Jenner had kept and traded on his secret, he might have become the richest man in the kingdom.

Sir GILBERT BLANE related how the New Inoculation had been introduced to the Navy. He had had the men on board the *Kent*, man-of-war, inoculated with cowpox, and then with smallpox, and not one took the latter disease. Of every thousand deaths in the country, smallpox was accountable for ninety-five. Taking London as the standard, 45,000 must perish annually from smallpox in the United Kingdom. As soon as the preventive discovered by Jenner became universal that large mortality would cease.

Dr. LETTSOM, a popular physician, a member of the Society of Friends, and an enthusiastic supporter of Jenner, said he had paid much attention to smallpox statistics. Taking London and the out-parishes as containing nearly 1,000,000 inhabitants, he calculated that eight a day, or 3000 annually died of smallpox. Allow-

ing Great Britain and Ireland to have a population of 12,000,000, that would give a mortality of not less than 36,000 per annum from smallpox. He had reason to conclude that about 60,000 persons had undergone the New Inoculation up to date. He did not think that the genuine cowpox when inoculated could ever prove fatal. Had Jenner kept his remedy secret he might have derived immense pecuniary profits from it, as did the Suttons by their improved practice of variolous inoculation.

Asked whether he had known any inoculated with smallpox subsequently contract smallpox, he replied that he had two relatives inoculated who afterwards had smallpox, and one of them died. He had recently attended two families, in each of which a child inoculated was laid up a year after the operation with smallpox.

Dr. WOODVILLE, forgiving Jenner's evil treatment, came, like a good Friend, to bear witness to the new practice. He had learnt to prefer vaccine to variolous inoculation at the Hospital. He had, up to January, 1802, operated with cowpox on 7,500 patients. About half of them had been subjected to the Variolous Test with satisfactory results.

Dr. BRADLEY, physician to the Westminster Hospital, said he looked on Jenner as the author of Vaccine Inoculation, and believed no medical man doubted it. As accidental inoculation with cowpox was proved to keep off smallpox for life, it was matter of course that intentional inoculation would do so also. Not less than 2,000,000 of persons had received Vaccine Inoculation, and he had never known an instance of any one dying of it. One in 300 died of smallpox inoculation in England, and not less than one in 150 throughout the rest of Europe, Asia, Africa and America. Had Jenner settled in London he might have made £10,000 per annum for the first five years, and double that sum afterwards.

Sir WALTER FARQUHAR, physician to the Prince of Wales, had told Jenner that if he had come to London and kept his secret, he would have ensured him £10,000

a year. He had however divulged his secret and lost all chance of emolument. His remedy was a permanent security against smallpox, and had never proved fatal; whilst variolous inoculation, performed in the best manner, cost one life in three hundred.

Mr. CLINE, surgeon to St. Thomas's Hospital, corroborated the opinion that Jenner could have earned £10,000 a year in London by means of his secret. As smallpox was the most destructive of all diseases, its suppression was the greatest discovery ever made in the practice of physic.

Mr. JOHN GRIFFITHS, surgeon to the Queen's Household and St. George's Hospital, had inoculated upwards of 1500 persons with cowpox without any untoward symptoms.

Mr. JAMES SIMPSON, surgeon to the Surrey Dispensary, had inoculated between fifty and sixty without any injury. Considered them perfectly secure from smallpox. A child of nine months covered with *crusta lactea* resisted all the usual remedies, but on the tenth day after he had inoculated it with cowpox, the crust began to disappear, and the twelfth day was entirely gone.

Dr. JOSEPH MARSHALL related his experience as a vaccine inoculator in the Navy and at Gibraltar, Malta, Palermo, Naples, Rome and Genoa. Everywhere was successful. Believed he had operated on 10,000, and never witnessed any ill consequences whatever. On the contrary, children in a weak state of health, after passing through the vaccine infection, began to thrive and become vigorous.

Mr. JOHN ADDINGTON, surgeon, had used Jenner's remedy since 1799 in eighty-one cases. One third of these he had inoculated with smallpox, and subjected to every method of infection he could devise, but found them perfectly proof against the disease.

Dr. SKEY, physician to the Worcester Hospital, testified that in the spring of 1801 smallpox was epidemic in Worcester. He inoculated a number of children with cowpox, and none of them took smallpox although constantly exposed to contagion.

Dr. THORNTON, physician to the Marylebone Dispensary, had inoculated a patient with cowpox, and afterwards with smallpox at twelve different times during the past three years without effect. He had even slept with a person in natural smallpox, who died, but took no harm. When at Lord Lonsdale's in the North he had operated on upwards of a thousand, and had completely satisfied himself, and all the medical practitioners in that part of England, that cowpox was a mild disease, hardly deserving the name of a disease. It was not contagious; it never disfigured the person, never produced blindness, nor excited other diseases. It was equally safe whether during the period of pregnancy, or the earliest infancy, or extreme old age.

Dr. BAILLIE then gave his influential judgment. He thought cowpox an extremely mild disease, and when a patient had properly undergone it, he was perfectly secure from the future infection of smallpox: and further, if Dr. Jenner had not chosen openly and honourably to explain to the public all he knew upon the subject, he might have acquired a considerable fortune. In his opinion it was the most important discovery ever made in medicine.

Mr. DAVID TAYLOR, surgeon of Wootton-under-Edge, had inoculated about two thousand persons with cowpox without a single failure, nor had he met with any ulcerations, tumours, or other diseases following the operation. He knew Jenner's practice in Gloucestershire. It was in a very populous neighbourhood where there was not another physician within sixteen miles. He had surrendered an income of £600 a year to devote himself to the public service.

As a final specimen of this medical evidence I may cite Mr. JOHN RING, the petitioner's henchman. He considered Jenner the author of Vaccine Inoculation, a discovery the most valuable and important ever made by man. It was a perfect and permanent security against smallpox. He had himself inoculated about 1200, of whom a thousand had exposed themselves to smallpox

infection with impunity. There was no danger whatever from the New Inoculation unless from ignorance and neglect. One in every hundred inoculated with smallpox in London died, owing to the unwholesome atmosphere and the necessity of operating on children at an improper age. If Jenner had kept his discovery to himself he might have made £10,000 a year by it; for others had got as much or more by the practice of physic.

This evidence, better than any secondary description, will enable the reader to appreciate the prevalent furore as it affected the leaders of the medical world. At the same time it is to be borne in mind that the craze was superficial. Any radical change in conviction or practice is never accomplished thus easily or thus rapidly. The medical men who bore witness for cowpox had been bred to inoculation with smallpox, for which cowpox was substituted. The change was essentially trivial. The trouble, the danger, and the uncertainty of variolous inoculation were generally recognised, and when cowpox was recommended as a mild form of smallpox, it was not difficult to appreciate the asserted advantage: for, as it was argued, no one can have smallpox twice, and as the mildest attack of smallpox is as prohibitive of a second attack as the severest, therefore cowpox (which is smallpox in mild form) must protect as effectually when inoculated. With logic so admirable, it was in nowise wonderful that so many were carried away; but unfortunately, as so often happens, matter-of-fact did not correspond to the admirable logic.

The DUKE OF CLARENCE testified that he had availed himself of Jenner's discovery from the outset. His children, his household and farm servants were all protected. A postillion positively refused to be operated on, and eighteen months after he caught smallpox in the most virulent form. Children who had undergone cowpox were constantly in the room where the lad lay and suffered no harm.

The EARL OF BERKELEY had his son inoculated with cowpox by Dr. Jenner at the age of six months. One of

his maid-servants took smallpox and died, and the effluvia during her illness was so offensive that his servants had to move to another part of the house. To test the reality of his son's protection, he sent for Jenner, and got him to inoculate the boy with pox from the maid. The child was found to be proof, for the inoculation had no effect—To illustrate the validity of the Gloucestershire tradition, he related how a man of 72 in his service had caught cowpox when a boy of 15 whilst milking, and in consequence always reckoned himself secure from smallpox, exposing himself to the disease with complete indifference.

Lord Rous gave similar evidence. His child had been inoculated with cowpox at the age of three months, and he was perfectly satisfied that he could never have smallpox.

Then there were lay practitioners, of whom Jenner's nephew, the Rev. G. C. Jenner, may be taken as an example. He bore witness that he had inoculated 3000 with cowpox without a single unfavourable case, from the earliest infancy to eighty years of age, and under circumstances in which it would not be prudent to use variolous virus; as, for example, children during teething and women in every stage of pregnancy. Upwards of two hundred of his patients had been afterwards inoculated with smallpox matter, and an equal number exposed to variolous effluvia, and in no instance did smallpox ensue. He was satisfied that as soon as the new practice became universal, smallpox would be annihilated.

An early date being wanted for "the discovery," Edward Gardner, wine and spirit dealer, was brought from Gloucester to affirm that he had known Jenner for more than twenty-two years, and had been in the constant habit of hearing his medical opinions and discoveries. It was in the month of May, 1780, that Jenner first informed him concerning the nature of cowpox as a sure preventive of smallpox, and of the theory he had formed on the subject; declaring his full and perfect

confidence that the virus might be continued in perpetuity from one human being to another until smallpox was extinguished.

It is needless to stigmatise Gardner's testimony afresh. It possibly had its foundation in Jenner discussing the familiar rural faith in cowpox. Sir EVERARD HOME mentioned to the Committee that Jenner had brought a drawing to London in 1788 of Variolæ Vaccinæ as it appeared on the finger of a milker, and had shown it to John Hunter, who advised him to look further into the matter; but it was not pretended that he spoke to Hunter of the matured conviction revealed to Gardner eight years before.

The Committee heard evidence as to the knowledge and use of cowpox apart from Jenner, and their verdict was given as follows—

> The disorder itself, and its specific property of securing against Smallpox infection, *was not a discovery of Dr. Jenner's;* for in various parts of England, in Gloucestershire and Devonshire particularly, there was an opinion of that sort current among the common people employed in dairies, which the observations of the inoculators for the Smallpox tended to confirm. It appears not improbable that in some very rare instances this knowledge was carried one step farther, and that the Cowpox was communicated either by handling the teat, or by inoculation from the animal, for the purpose and with the intention of securing against the danger of Smallpox; but the practice of which Dr. Jenner asserts himself to be the original Inventor is, the inoculation from one human being to another, and the mode of transferring indefinitely, the vaccine matter without any diminution of its specific power, to which it does not appear that any person has ever alleged a title.

Thus the Committee disallowed Jenner's claim, whilst indicating the only colourable point of novelty, namely, the transfer from arm to arm of virus. At the same time, it should not be forgotten that inoculation from arm to arm with "mild kinds of smallpox" was an existing practice, and there was little merit to speak of in Jenner doing the same thing with horse or cowpox.

There was no opposition—no devil's advocate; but it may be held that Dr. Pearson assumed that office. He was heard with impatience, and afterwards delivered his

mind in *An Examination*, to which we shall presently refer.

The Report to the House was brought up on the 2nd of June, 1802, and was conclusive as to the utility of the discovery. Indeed, the evidence on that head was only cut short because it threatened to be interminable. The judgment of the Committee reiterated the common persuasion—"As soon as the New Inoculation becomes universal, *it must absolutely extinguish* one of the most destructive disorders by which the human race has been visited."

Admiral BERKELEY, chairman of the Committee, commended the Report to the House. He considered the discovery as unquestionably the greatest ever made for the preservation of the human species. *It was proved* that in the United Kingdom 45,000 perished annually from smallpox; but throughout the world what was the desolation! Not a second struck but a victim was sacrificed at the altar of that most horrible of diseases. He should therefore move that a sum of not less than £10,000 be granted to the Petitioner, but if the House thought fit to adopt any larger sum, he should hold himself free to vote for it. Why, Dr. Jenner's expenses in postage alone had been from 25s. to 30s. a day!

Sir HENRY MILDMAY did not think £10,000 at all adequate. Had Jenner kept his secret he might have made at least £100,000. He moved that he should have £20,000.

Mr. WINDHAM said the petitioner had surrendered his discovery to his country, and was therefore entitled to remuneration. The discovery had been the labour of years and the fruit of extensive practice.

Sir JAMES SINCLAIR ERSKINE was assured that Jenner had expended £6000 in the propagation of his discovery, and if he had £10,000, he would be left with no more than £4000. Besides, he had given up a practice of £600 a year to benefit his fellow-creatures.

Mr. COURTNEY observed that the evidence showed that 40,000 men would be annually preserved to the State by

the New Inoculation. These would return £200,000 a year to the Exchequer, and if the Petitioner had only a tithe of that sum for one year, he was entitled to £20,000.

Mr. WILBERFORCE stated that Jenner had spent upwards of twenty years in completing his discovery. He was no adventurer seeking to push himself before the world. He had already attained to great celebrity in his profession, and had sacrificed his practice for the public good. In every view he thought the larger sum ought to be granted.

Mr. GREY thought £10,000 would be no more than an indemnity for expenses. He hoped the House would vote for £20,000.

Mr. BANKS said there was no question as to the utility of the discovery. If he felt more niggardly than other members, it was because his paramount duty consisted in guarding the public purse. That purse was a large one, but it was not to be dipped into at pleasure. The strength of the country lay in economy and sound finance. He did not see that a case had been made out for so large a sum as £10,000. The discovery itself might be trusted to pay its author. He always looked on a Report of a Committee with jealousy, for it was controlled by the friends of the Petitioner, and there was no one with sufficient motive to provide the correctives required in the public interest.

Mr. ADDINGTON, Chancellor of the Exchequer, held that the value of the discovery was without example, and beyond calculation. So much, indeed, was not contested. The Petitioner had received the highest reward in the approbation, the unanimous approbation of the House; an approbation richly deserved, since it was the result of *the greatest discovery since the creation of man.* Whatever money the House might see fit to vote on some future occasion, his present duty was to recommend the smaller sum of £10,000. In doing so, he admitted, he surrendered his private inclination to his sense of public duty. He had, however, the satisfaction in knowing that this discussion had conferred on Dr. Jenner a reward that would

endure for ever, whilst the comfort of his family would be amply ensured in the extension of practice that would follow the approbation of the House.

The question was then put that the words £10,000 do stand part of the resolution; when the Committee divided —Ayes 59, Noes 56, Majority 3.

The discussion in the House of Commons shows how wide was the general craze. Facts and figures were evolved at discretion and repeated indiscriminately. To rave about Jenner, the saviour from small-pox, was the mode. It was as if all had consented to go mad together. Mr. Dunning, a surgeon, otherwise rational, broke into prophetic fury—

> With pride, with just and national pride, we boast a Newton and a Harvey; posterity will boast a Jenner! *

Considering the value set on "the great discovery," the award of £10,000 was not excessive. In the *Medical Journal* it stands recorded—

> We have never witnessed a more unanimous and general disappointment than that which has been expressed, not only by the profession, but by the public at large, at the smallness of the remuneration. †

On the other hand, it is to be remembered that the times were dark and hard, cruelly hard, through war and scanty harvests; the quartern loaf selling at 1s. 11d., a significant index of the people's misery.

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* *Medical Journal*, January, 1802. † *Ib.* July, 1802.

CHAPTER XI.

PEARSON'S *EXAMINATION.**

A FEW weeks after the award of £10,000 to Jenner by the House of Commons, Dr. Pearson published *An Examination* of the report of the committee. He did not contest Jenner's claim to consideration, but the ground on which it was advanced, and on which it was conceded; drawing attention to the manner in which the claims set forth in Jenner's petition had been reduced to "inoculation from one human being to another," whilst a new claim was invented for him, "to wit, the mode of transferring, indefinitely, the vaccine matter without any diminution of its specific power."

What Pearson held, and rightly held, was, that the public acceptance of the New Inoculation was due to Woodville and himself, and not to Jenner—

> The Cowpock Inoculation (after Dr. Jenner's book was published in June, 1798, which contained seven or eight cases, the whole result of his experience) was not practised by any person that I know of, till January, 1799, neither Dr. Jenner, nor any person that I could find being in possession of matter; but, in January, 1799, in consequence of a general inquiry, which I had instituted immediately after Jenner's publication, information was given of the Cowpock Disease breaking out in two Cow-stables near London, and from these sources Dr. Woodville and myself collected matter, by which, in the course of three months, 300 persons (not fewer, I think) were inoculated for the Cowpock in addition to the seven or eight cases of Dr. Jenner, then the whole stock of facts of Inoculation before the public. Besides carrying on the Inoculation ourselves in this manner, we disseminated the matter throughout the country, in particular to Dr. Jenner himself; and especially, I within that time issued a printed letter, directed to upwards of two hundred practitioners in different parts of the kingdom, containing thread impregnated with the Cowpock matter. . . By the close of 1799 about 4000 persons had been inoculated by Dr. Woodville, myself, and our correspondents.

* *An Examination of the Report of the Committee of the House of Commons on the Claims of Remuneration for the Vaccine Pock Inoculation: containing a Statement of the Principal Historical Facts of the Vaccinia.* By George Pearson, M.D., F.R.S. London, 1802. 8vo. Pp. 196.

Pearson also claimed to have cleared away difficulties created by Jenner's statements, some of which were most prejudicial to the public acceptance of the New Inoculation—

I published experiments of inoculating persons with the Cowpock to show that *they could not take the Cowpock after the Smallpox*, contrary to Dr. Jenner. Secondly, experiments to show that persons could not take the Cowpock who had already gone through the Cowpock, also contrary to Dr. Jenner.* Thirdly, many persons had at this period made experiments to show that *the Cowpox did not originate in the grease of Horses' heels*, as Dr. Jenner had asserted. In the spring of 1799, a second publication appeared from Dr. Jenner recommending caustic or escharotics to the inoculated parts in Cowpox, which we found wholly unnecessary in practice; and I consider that the distinctive characters of the Cowpock were better understood by some of us than by Dr. Jenner himself.

One can only say of these statements of Pearson as against Jenner, that they are simple matters of fact, impugn them whoso list. It is impossible to controvert Pearson's assertion—

That the whole of Jenner's experience extended to seven or eight cases, and a part only of these—namely, four—were from human subject to human subject; and not until long after Dr. Woodville and myself had published several hundred instances of vaccine virus transmitted from arm to arm, had he any experiments to set alongside ours.

They had to find out for themselves when to take virus from the cow, how to preserve it when taken, how to dress inoculated arms, when to take virus from the arm, and, in short, to do everything that constitutes the difference between a suggestion and an art.

Pearson, too, as we have seen, had a leading part in the formation of the first Institution for the Inoculation of the Vaccine Pock, with which Jenner had not only nothing to do, but *would* have nothing to do: concerning which wrote Pearson—

* Such was the logic, but such was not the fact. If no one could have Smallpox twice, and if inoculated Cowpox was equivalent to Smallpox, no one could have Cowpox twice. Such was the argument. Pearson did not foresee its systematic refutation exemplified in Re-Vaccination, septennial, triennial, annual.

The Vaccine Inoculation was next considerably established by the Cowpock Institution, of which I was one of the founders, commencing at the close of 1799; which Institution has been the principal office for the supplying the world in general, and the Army and Navy in particular, with matter; and where a regular register is kept of each of the cases inoculated.

As to Jenner keeping the secret of Cowpox and making a great fortune out of it, Pearson replied, first, that he had not proved his remedy; second, that he would have had to persuade the public to believe in him; and, third, that too much was known about Cowpox to have made a secret possible. Moreover, the assertion that he might have earned £10,000 a year and a fortune of £150,000 was absurd—

Such a fortune no one ever acquired by physic in this or any other country—far exceeding the greatest ever known, those of Sir Theodore Mayerne in the first half of the 17th century, and of the still greater one of Dr. Ratcliffe in the early part of last century.

When it was further said, that experiments in Vaccine Inoculation had occupied twenty years of Jenner's life, that they had cost him £6000, and that he had surrendered a practice of £600 a year in the populous neighbourhood of Berkeley for the public benefit—he would not trust himself to characterise the allegations.

His own position, Pearson thus defined—

I have admitted that Dr. Jenner first set on foot the inquiry into the advantages of Vaccine Inoculation; but I apprehend that the practice has been established almost entirely by other practitioners; and that his new facts, or which I consider to be new, have been, in my opinion, disproved by subsequent observers; and that in consequence of those facts being disproved, together with the very ample experiences of other persons, we owe the present extensive practice of the Vaccine Inoculation.

Pearson further indicated on what conditions he would have been satisfied to see Jenner rewarded—

A much more dignified and more just ground of claim, and an equally favourable one for remuneration, would have been in terms denoting that the Petitioner had proposed a new kind of Inoculation, and actually furnished some instances of the success of it, founded upon facts; of which some were brought to light and use, which heretofore had only been locally known to a very small

number of persons; and others were discoveries of the Author: further, that in consequence of considerable subsequent investigation, by the Author and others, such a body of evidence had been obtained, and such further facts had been discovered, as demonstrated the advantages of the new practice.

Whilst willing that Jenner should be rewarded, for Woodville and for himself, Pearson wanted nothing: he simply maintained that the judgment of the House of Commons Committee should have recognised the facts of the situation. He observed—

I have some authority for stating that the members of the Committee *did not unanimously* think such exclusive claims were just. I had some reason to expect that the representation of the Committee in their Report would have been such as to have satisfied the expectations, not exorbitant, of Dr. Woodville and myself; such as would have cost the Petitioner nothing, *to wit*, a mere acknowledgment of services. The most unqualified and exclusive claims having been decreed, this bounty of course has been withheld, either because it was judged to be not owing, or from some other motive which I will not name; but it is fitting that I disclaim any insinuation of unworthy motives actuating those with whom judgment was invested.

Considering the injustice to which Pearson had been subjected, and the provocation he had received, it is impossible to refrain from admiration of the serene and impartial temper in which he composed his *Examination*. Had he sat as judge between Jenner and himself, he could not have stated the case with greater accuracy and absence of bias. He fell into no exaggeration; he indulged in no sarcasm; he descended to no abuse. He set forth the incidents of the New Inoculation with the imperial simplicity and dignity of truth. Where others had gone crazed, he preserved some degree of sanity. He held it to be premature to proclaim the extinction of Smallpox, or to say with Jenner that reports of failure and injury from inoculated Cowpox were beneath contempt. It was only time and experience that could warrant such absolute assertion and prediction.

It is said that in hurricanes of panic or enthusiasm, wise men go home and keep quiet until the sky clears, resistance being folly. For immediate effect resistance

may be folly, but the protest of truth is sometimes imperative, whatever the disposition of the mob. Pearson took little at the time by his *Examination:* it entered into far too many details for general apprehension; and it was convenient to account for his opposition as due to jealousy and envy. Jenner attempted no reply, and assumed profound disdain. His silence was judicious, but it was not from disdain.

At this day it is easy to see that Pearson as against Jenner played his part badly, failing to recognise his proper advantage. Jenner's prescription in the *Inquiry* of 1798 was not Cowpox. It was Horsegrease Cowpox. It was a disease of the horse inoculated on the cow. Cowpox *per se* he expressly rejected as useless, having no specific effect on the human constitution. Pearson and Woodville entertained Jenner's prescription in good faith. They tried to generate pox on the cow with grease from the horse, but did not succeed. Reluctantly they abandoned Jenner's prescription, and resorted to Cowpox.

Whilst Pearson and Woodville were without prejudice against Horsegrease Cowpox, it was otherwise with the public. The origin of Cowpox in Horsegrease was voted detestable, and had the origin been maintained, it is not improbable that the New Inoculation would have proved abortive.

This difficulty Pearson and Woodville, the chief promoters of the New Inoculation, cleared away. They had tried Horsegrease; they considered they had disproved Jenner's assertion concerning it; and they were able to assure the public that they inoculated with Cowpox, and nothing but Cowpox, and had no connection with Horsegrease whatever. The public were satisfied; and Inoculation with Cowpox became the rage, fashionable and philanthropic.

What did Jenner do? Did he vindicate his prescription, the fruit of thirty years of incessant thought, observation and experiment? He did not. On the contrary he dropped it. He said not another word about

it; and proceeded to claim Cowpox as employed by Pearson and Woodville as his discovery. In his petition to Parliament there was no mention of Horsegrease Cowpox; but Cowpox, with "its beneficial effect of rendering the persons inoculated therewith perfectly secure through life from the infection of Smallpox," was set forth as the result of his most attentive and laborious investigation at the sacrifice of time, money, and professional advancement. We have to recollect that Jenner was inspired with what he called "the fond hope of enjoying independence," and he was not slow to recognise, that if he stood by Horsegrease Cowpox his "fond hope" would be wrecked. The statement may seem incredible, but the fact of the transformation is manifest at large to any one who will take the trouble to compare Jenner's *Inquiry* of 1798 with his Petition to the House of Commons in 1802.

Pearson failed to arrest the imposture. He might have said to Jenner, "Your discovery was not Cowpox: that was well known to every dairymaid in your neighbourhood. Your prescription was Horsegrease Cowpox. You condemned Cowpox, which Cowpox has nevertheless been brought into use by Woodville and me. Keep to your Horsegrease Cowpox; make what you can of it; and leave us alone."

Had Pearson taken this course, he would have fixed Jenner to his discovery, such as it was, and have clearly defined and established his own and Woodville's service in rendering the New Inoculation practicable and popular. But he failed to draw a firm line between Woodville and himself and Jenner, and to insist that they were operating, not only with a different pox, but with a form of pox by him rejected as useless. Through this default, he enabled Jenner to intrude into a province that was not his own, and to reap where he had not sown, and gather where he had not strawed. It is to be admitted that the facts as stated were all involved in Pearson's *Examination,* but they were *involved,* and required picking out and sharper definition to give them effect. Truth is

truth, but truth to have its rightful influence has to be made plain. It is of little avail to have a good cause at law if the means are wanting to place its goodness manifest and paramount over contention to the contrary.

This, too, may be observed: Pearson was not in condition to offer the manner of resistance specified. To have turned Jenner's flank, it would have been necessary to discredit Cowpox; and Pearson was committed to Cowpox. Jenner had been familiar from youth with the dairymaids' faith in Cowpox. Why then did he not advertise its virtue? Because it had been proved to him that the dairymaids' confidence was illusory. His recommendation of Horsegrease Cowpox attested his distrust in Cowpox. If Pearson had asked himself, What induced Jenner to set aside Cowpox for Horsegrease Cowpox? the answer would have revealed to him a whole series of facts to the discredit of that prophylaxy of which he and Woodville had constituted themselves advocates. Thus, fettered by his own prepossession, Pearson was unable to deal effectually with Jenner without incurring a disenchantment fatal to his own enterprise.

When we recognise that Jenner's prescription was a disease of the horse communicated to the cow, which Pearson and Woodville set aside for Cowpox, the controversy as to the originator of the use of Cowpox for inoculation loses significance. We have to assert peremptorily that Jenner had no claim to the use of Cowpox whatever. It is true that he advanced the claim in his *Origin of the Vaccine Inoculation* in 1801, and in his Petition to Parliament in 1802; but those who refer to his *Inquiry* of 1798 will require no further proof of his mendacity. That his claim to the use of Cowpox was entertained can only be ascribed to that indolence, ineptitude and ignorance on the part of the world whereon quacks presume and prosper.

It was Pearson and Woodville, I once more repeat, who diffused and popularised Cowpox; and Pearson's inquiries left no doubt that the faith in Cowpox as a

preventive of Smallpox was widely entertained; and that the substitution of Cowpox for Smallpox in inoculation was a mere question of time and accident. Mr. Downe of Bridport informed Pearson that a surgeon in his neighbourhood suffered discredit in practice because it was reported that he inoculated with Cowpox instead of Smallpox; and the papers of Mr. Nash, surgeon, of Shaftesbury proved that in 1781 he had the project of Cowpox Inoculation distinctly before him. The evidence of Benjamin Jesty, farmer of Downshay in the Isle of Purbeck, has usually been taken as most conclusive in relation to the immanence of the New Inoculation in the common mind. Jesty was invited to London by the conductors of the Original Vaccine Pock Institution, 44 Broad Street, Golden Square; and in August, 1805, they had him with his wife and two sons under examination. In their report* it is said—

> We think it a matter of justice to Mr. Jesty, and beneficial to the public, to attest, that among other facts he has afforded decisive evidence of his having vaccinated his wife and two sons, Robert and Benjamin, in the year 1774; who were thereby rendered insusceptible of the Smallpox, as appears from the frequent exposure of all three to that disorder during the course of 31 years, and from the inoculation of the two sons for the Smallpox 15 years ago.

It is to be observed that insusceptibility to Smallpox was by no means infrequent apart from Cowpox; and as fear of Smallpox predisposes to attack, so, on the other hand, confidence in security, whether by Cowpox or other charm, would tend to exemption.

Jesty's reasons for his experiment were thus specified—

> He was led to undertake the novel practice in 1774 to counteract the Smallpox, at that time prevalent at Yetminster, from knowing the common opinion of the country ever since he was a boy (now 60 years ago) that persons who had gone through the Cowpock naturally, that is to say by taking it from cows, were insusceptible of the Smallpox.
>
> By himself being incapable of taking the Smallpox, having gone through the Cowpock many years before.
>
> From knowing many individuals who after the Cowpock could not have the Smallpox excited.

* *Edinburgh Medical and Surgical Journal*, October, 1805. P. 513.

From believing that the Cowpock was an affection free from danger; and from his opinion that by the Cowpock Inoculation he should avoid engrafting various diseases of the human constitution, such as "the Evil, madness, lues, and many bad humours," as he called them.

In these reasons we have the Cowpox doctrine as prevalent in Dorsetshire, which Jesty developed in family practice. The report proceeds—

The remarkably vigorous health of Mr. Jesty, his wife, and two sons, now 31 years subsequent to the Cowpock, and his own healthy appearance, at this time 70 years of age, afford a singularly strong proof of the harmlessness of that affection; but the public must, with particular interest, hear that during the late visit to town, Mr. Robert Jesty submitted publicly to inoculation for the Smallpox in the most rigorous manner; and that Mr. Jesty also was subjected to the trial of inoculation for the Cowpock after the most efficacious mode, without either of them being infected.

It is curious how evidence conforms to prepossession. Dr. Pearson and his associates were persuaded that as no one could have Smallpox twice, neither could any one have Cowpox twice. Jesty had Cowpox when young, and when at three score they found him insusceptible, they took it for granted that re-vaccination was impossible. Robert Jesty, who had Cowpox thirty-one years before was at the same time inoculated with Smallpox, and as that likewise failed to take, the experiment enforced the desired conclusion.

Having turned out so well, praise and portraiture were bestowed on Jesty—

The circumstances in which Mr. Jesty purposely instituted the Vaccine Pock Inoculation in his own family, namely, without any precedent, but merely from reasoning upon the nature of the affection among cows, and from knowing its effects in the casual way among men, his exemption from the prevailing popular prejudices, and his disregard of the clamorous reproaches of his neighbours, will entitle him, in our opinion, to the respect of the public for his superior strength of mind. Further, his conduct in again furnishing such decisive proofs of the permanent anti-variolous efficacy of the Cowpock, in the present [1805] discontented state of mind in many families, by submitting to Inoculation, justly claims at least the gratitude of the country.

As a testimony of our personal regard, and to commemorate so

extraordinary a fact as that of preventing the Smallpox by inoculating for the Cowpock 31 years ago, at our request, a three-quarter length picture of Mr. Jesty is painted by that excellent artist, Mr. Sharp, to be preserved at the Original Vaccine Pock Institution.

Geo. Pearson, Law. Nihell, Thos. Nelson,	*Physicians.*	Fras. Rivers, Ev. A. Brande, Ph. De Bruyn,	*Visiting Apothecaries.*
T. Keate, T. Foster,	*Consulting Surgeons.*	John Heaviside, Thomas Payne,	*Treasurers.*
J. C. Carpue, J. Doratt,	*Surgeons.*	William Sancho,	*Secretary.*

6th September, 1805.

In the church-yard of Worth Matravers, Dorset, there is a grave-stone with this inscription—

Sacred to the Memory of

BENJAMIN JESTY, of Downshay,

who departed this life

April 16th, 1816, aged 79 years.

He was born at Yetminster, in this County, and was an upright honest man, particularly noted for having been the first person known that introduced

THE COWPOX BY INOCULATION,

and who, from his great strength of mind, made the experiment from the Cow on his Wife and two Sons in the year 1774.

Jesty is frequently played off against Jenner, as having anticipated him, but under a misapprehension. Jesty inoculated with Cowpox, sharing the dairymaids' faith that it prevented Smallpox. Jenner knew that the dairymaids were wrong, and that Cowpox did not avert Smallpox. What he recommended was Cowpox produced by Horsegrease. Pearson and Woodville disregarded Jenner's recommendation and made use of Cowpox like Jesty, which substitution Jenner did not resist; and not only did not resist, but claimed as the fulfilment of his programme! Jenner should never be suffered to get mixed up with Jesty, and the course of his procedure be thereby obscured.

I am explicit to iteration because the truth is not recognised and may be accounted incredible. In another way the facts may be thrown into relief if we inquire, How would Jenner have fared had he applied for a patent? Suppose his several publications were submitted to a patent-agent, In what manner could a tenable specification be evolved from these materials?

1798.—*The Inquiry.*	Prescribes Horsegrease Cowpox.
1799.—*Further Observations.* 1800.—*Continuation of Observations.*	Slackens off from Horsegrease Cowpox; ascribes its efficacy to common repute; and recommends escharotics to arrest its virulence.
1801.—*Origin of Vaccine Inoculation.* 1802.—Petition to Parliament.	Claim of discovery and use of Cowpox, previously condemned as spurious, and Horsegrease Cowpox dropped.

By no ingenuity could a valid patent be got out of these documents. If Horsegrease Cowpox were selected as the basis of claim, what of the repudiation of Cowpox? and if Cowpox, what of Horsegrease Cowpox? And if Horsegrease Cowpox, what of the ascription of its virtue to common repute? And if Cowpox, was not the committee of the House of Commons in 1802 compelled to disallow Jenner's claim to the discovery, and to define and limit his merit to the propagation of its virus from arm to arm? It was, however, Pearson and Woodville who first propagated Cowpox from arm to arm: Jenner's start being made with Horsegrease Cowpox. But allowing him so much credit, it is nevertheless to be remembered that it was at that time a frequent practice to inoculate with Smallpox from arm to arm; and the substitution of Cowpox for Smallpox was a trifle for which to pay £10,000 and dissolve in ecstasies of admiration.

CHAPTER XII.

OBSERVATIONS ON THE POSITION IN 1802.

ONE of my medical readers observes—

> The House of Commons in 1802 was committed to a variety of extravagances, but, allowing for these, you have to account for certain evidence that Cowpox had *some* influence over Smallpox; for you surely do not mean to contend that it had *no* influence over that disease, and that the evidence before the Committee was a uniform tissue of illusion and delusion.

Put thus, it is as difficult to deal with the objection as it is to prove a negative. It is not for me to define the influence of cowpox over smallpox, but for those who believe in its prophylaxy. I should argue that as ill-health leads to ill-health, and as corruption breeds corruption, that inoculated cowpox would generate a habit of body favourable to smallpox, and at the same time tend to excite and intensify other forms of disease. I would also ask, What are the extravagances to be allowed for? When these are determined we may then proceed to discuss what are not extravagant. It is a common form of evasion to make a general confession of guilt in order to avoid the pain of specific and explicit condemnation. It is conceded that the House of Commons in 1802 "committed a variety of extravagances," and under this appearance of candour the chief extravagance is implicitly re-asserted and carried forward, namely, that inoculated cowpox had an influence adverse to smallpox.

In the "variety of extravagances," few, I suppose, would hesitate to include the asserted annual smallpox mortality of the United Kingdom. Sir Gilbert Blane pronounced it 45,000, while Dr. Lettsom gave it as 36,000—a wide difference in the play of fancy! Dr. Lettsom, who claimed to have paid much attention to figures connected with smallpox, was pleased to convert an extreme London mortality, namely, 3000, into the ordinary mortality, although in some years it fell under 1000. Then estimating the population of London at one million, and the

population of the United Kingdom as twelve millions, he multiplied 3000 by 12, and evoked the astounding national death-rate of 36,000 annually from smallpox, all of whom were to be saved by Jenner's prescription! But whether he had taken the average or even the lowest metropolitan mortality, the computation would have remained grossly fallacious. London overcrowded and pestiferous, was no standard for the general population, urban or rural; and the assumption was monstrous that smallpox, a notoriously sporadic disease, was constant and equally diffused over the land. We are without comprehensive vital statistics for the time in question, but arguing from the London of to-day in continual connection with the provinces, to the London of 1802 in comparative isolation, what do we find? Why, smallpox prevalent in London with little or no smallpox in the country! In the *Pall Mall Gazette* of 31st May, 1878, we read—

> The degree in which the Smallpox epidemic of the last seven years has been localised in London is very remarkable. The *Lancet* points out that during the week ending 25th May, 51 fatal cases were registered in London and its suburban districts, whereas not one was recorded in any of the nineteen large provincial towns having an aggregate population about equal to that of London. Since the beginning of the year the fatal cases of Smallpox within fifteen miles of Charing Cross have been 1,134, while but 8 have occurred in the nineteen other large towns.

We find similar illustrations of the sporadic character of smallpox wherever we can get at the facts. In 1874 there died in London 735 of smallpox, but not one in Birmingham; 386 in Liverpool, but not one in Plymouth; 347 in Salford, but not one in Nottingham; 190 in Manchester, and but 1 in Sheffield; 24 in Bristol and 4 in Leeds; and so on. What reason is there to believe that what is true of smallpox within our own experience was otherwise in the experience of our forefathers?

I said that few would hesitate to include Dr. Lettsom's 36,000 and Sir Gilbert Blane's 45,000 among the extravagances of 1802, but I forgot myself. We have a National Health Society with the Duke of Westminster for Presi-

dent and all manner of notables, aristocratic, philanthropic, scientific, and literary, among its committee and members. Now this Society issues a hand-bill of advices and warnings relating to smallpox, approved too by the Local Government Board, and there we find set forth as unquestionable matter of fact—

"*Before the introduction of Vaccination Smallpox killed 40,000 persons yearly in this country.*"

We thus see how hard it is for a convenient fable to die, even when known to be false, and how respectable people will keep repeating it as long as they fancy it is for good.

Absurd as was the extension of the ratio of London smallpox to the populations of the United Kingdom, of Europe, and of the world, the London disease itself afforded little warrant for the extreme terms of horror and dismay with which it was described. Smallpox did not increase the death-rate of London: when smallpox was most prevalent and least prevalent, the total mortality was but slightly affected. As long as the sanitary conditions of the great city remained unchanged, fevers replaced smallpox and smallpox replaced fevers, and whether deaths were from one form of disease or another, so that the people died the same, what did it matter? Smallpox when most prevalent was never accountable for much more than 10 per cent. of the total London mortality, and in some years for less than 3 per cent.; and it is to be remembered that the larger portion of that mortality was infantile mortality—smallpox being in the great majority of cases a disease of the young; none the less objectionable on that account, but less chargeable than some other forms of zymotic disease with striking down the adult bread-winner and enlarging misery and pauperism.

Again, in much of the talk about smallpox, it was assumed that the disease had no limits—that it was something like fire, and might spread to any extent if unchecked. But what was there to justify such an assumption? Assuredly nothing in London experience.

Smallpox was always present in London, waxing and waning under some unknown law; the deaths rising as high as 3992 in 1772 and falling as low as 522 in 1797—the extremes of the century. Why did 4000 never die in any year, or 7000, or 10,000? When a fire is extinguished, we know it has met with a check; and if smallpox caused 3992 deaths in 1772 and 522 in 1797, and smallpox be like fire, there was, we see, a check; and I ask, What was that check? There may be answers, but none for unreserved acceptance. What is certain is, that in London smallpox was never an illimitable affliction. It had limits, and it was only in the rhetoric of alarmists that it had none.

And the check to the disease (whatever it was) lay in the bodies of the citizens, and not in their therapeutics. Isolation was rarely attempted, and in their crowded habitations was impracticable. Moreover they had not only the smallpox appropriate to their evil conditions to contend with, but the disease as propagated and diffused by the inoculators. What we have to say is, that whilst in the London of last century we behold smallpox endemic and cultivated, yet in no year did the mortality therefrom exceed 4,000; and further, that with so much to favour and stimulate the disease it was a diminishing quantity. In the words of Dr. Farr—

> London Smallpox attained its maximum mortality after inoculation was introduced, and the disease began to grow less fatal before vaccination was discovered.

We shall see as we proceed how the natural check to smallpox (whatever it was), the immunity of the majority from infection, and the decline of the disease were all claimed as the blessed results of Jenner's prescription; and now-a-days it has passed into common-place, for which evidence is thought superfluous, that without that prescription smallpox might have illimitable extension. If anywhere a variolous epidemic is slight, it is said that but for vaccination it would have been severe; and if severe, that its intensity would have been doubled or trebled save for the action of the same prophylactic.

We have a remarkable illustration of this style of prophecy in the Report of the Select Committee of the House of Commons upon the Vaccination Act of 1867, dated 23rd May, 1871, where we read—

> Smallpox unchecked by Vaccination, is one of the most terrible and destructive of all diseases as regards the danger of infection, the proportion of deaths among those attacked, and the permanent injury to the survivors.
>
> Your Committee believe that if Vaccination had not been general, *the epidemic* [then prevalent] *would have become a pestilence, raging with the destructive force of the Plague of the middle ages.*

What is beyond evidence is beyond refutation; and the imaginations of M.P.'s, dull though they be, not unfrequently prevail over their intelligence.

To set aside the mass of testimony adduced by Jenner's friends before the Commons' Committee in 1802 is sometimes described as a hopeless undertaking; but the answer to such a boast is, that experience has nullified the essential part of that testimony, and that there is little left to account for. No well-informed medical practitioner now believes what the Committee was led to believe, that to be inoculated with cowpox was to be secure from smallpox for life. The security, where still credited, is subject to so many qualifications that the primitive inoculators with cowpox would have thought such protection not worth paying for, still less of exulting over as the greatest discovery ever made in medicine. Nor would many now admit the validity of the Variolous Test which then carried conviction with irresistible force. Inoculation with smallpox was in itself an uncertain operation, and that it should fail after inoculation with cowpox, ere the poisoning of the blood had been worked off, was in nowise surprising. The exposure of vaccinated subjects to smallpox infection was in like manner deceptive; and it was conveniently forgotten that all manner of people were exposed to contagion with impunity in the usual circumstances of life. Taking a year of exceptional smallpox in London, such as Dr. Lettsom set forth as ordinary, when 18,000 were affected

and 3000 died (that is one in six), there were in the million of inhabitants 982,000 who escaped. How did they escape? A multitude must have come into immediate contact with the sick: How did they remain unscathed? The question is simple, but it is crucial. If smallpox were like fire, and men, women, and children like fuel, why did not all burn? Under what prophylaxy did they abide secure? Again in this connection, we must not lose sight of the magic of faith. Things being equal, two persons exposed to smallpox, one confident that he was invulnerable through vaccination, and the other apprehensive of danger, the chances are, that the fearful would be attacked whilst the fearless would have his faith justified in immunity.

In considerations thus obvious it is not difficult to understand how the testimony delivered to the Committee had a semblance as of veracious Nature. Any one who has studied the history of remedies, or the various quackeries within his own observation, will know how easy it is to conjure up testimony, with asseverations presumptuous to question, which by-and-by are gradually discredited and ultimately disappear in forgetfulness. I have, therefore, no disposition to be hard on the men of 1802. From our vantage of experience we see how they were led astray, and recognise the pressure of the influences under which they acted. Moreover a remedy that bore the promise of relief from the pest of smallpox inoculation came with strong seduction. What a pest that inoculation was, how it was loathed, and how it was submitted to under the persuasion of duty are written at large in the domestic memoirs of last century. Every mother among the upper and middle classes was persuaded that it was necessary for her children to undergo the variolous ordeal—an ordeal that involved the deliberate introduction of smallpox into her household. It was hateful, it was intolerable, and yet it had to be endured! The doctors minimised the risks to the uttermost, but what they really believed plainly appeared when vaccination presented itself as an alternative.

Then smallpox inoculation was denounced by its former practitioners with a fervour that contrasted painfully with their antecedent professions; whilst parents heard with indescribable satisfaction that absolute life-long security from smallpox was henceforward insured at the price of a trifling operation attended by no peril whatever, and with distinct benefit to health. To make the contrast clear I subjoin copy of a hand-bill that was posted on walls and circulated by thousands in London and the country at the time of which I write, 1801-2.

A TABLE SHEWING THE ADVANTAGES OF VACCINE INOCULATION.

The Natural Smallpox.	*The Inoculated Smallpox.*	*The Inoculated Cowpock.*
I. The natural Smallpox is a loathsome, infectious, painful, and fatal disease. It is confined to no climate, but rages in every quarter of the world, and destroys a tenth part of mankind.	I. The inoculated Smallpox also is loathsome, infectious, painful, and sometimes fatal; and, when partially adopted, spreads the contagion, and increases the mortality of the disease.	I. The inoculated Cowpock scarcely deserves the name of a disease. It is not infectious; and, in the opinion of the most experienced practitioners has never proved fatal.
II. Those who survive the ravages of that dreadful distemper, often survive only to be the victims of other maladies, or to drag out a miserable existence worse than death.	II. It sometimes occasions the same maladies as the natural Smallpox.	II. It occasions no other disease. On the contrary, it has often been known to improve health, and to remedy those diseases under which the patient before laboured.
III. This cruel and lamentable disorder leaves behind it pits, scars, and other blemishes and bodily deformities which embitter life.	III. It frequently leaves behind it the same blemishes and deformities as the natural Smallpox, which are the more deplorable as they are brought on by a voluntary act.	III. It leaves behind no blemish, but *a Blessing*—one of the greatest ever bestowed on man—*a perfect security against the future infection of the Smallpox.*

From this faithful statement of the advantages attending VACCINE INOCULATION, it must appear evident to every unprejudiced person, that it is the duty as well as the interest of every parent, of every individual, and of every nation, to adopt the practice, and to hasten

THE EXTERMINATION OF THE SMALLPOX.

It was thus that Vaccination was introduced to the English people, not by men accounted quacks, but by leaders of the medical profession; and whatever the illusions and mischiefs of the new practice, we must allow it the credit of discouraging and ultimately superseding the grosser practice of inoculation with smallpox. As for the various items in the bill, we have had, and shall have them before us, and I would only now recall attention to the initial statement that "Smallpox destroys a tenth part of mankind." The summary answer to the statement is that the number of mankind was unknown, likewise their diseases, and the proportion in which they were fatal. It was a repetition of Dr. Lettsom's unwarrantable extension of a bad year of London smallpox to the whole earth. Even in an occasional year when upwards of 3000 died in London of smallpox, the total average mortality was not seriously affected thereby. The deaths, as we have observed, were merely taken out in smallpox instead of in some other form of fever. That nothing can permanently reduce the death-rate of any community save improved sanitary conditions and personal habits was unrevealed in 1802.

Notwithstanding the exultation over Jenner, "the saviour of the world from smallpox," and over "the greatest discovery since the creation of man," the suspicion is unavoidable that it was largely factitious—"from the teeth outwards," as Carlyle would have said. The vote of £10,000 to the miraculous benefactor of the human race was carried by a majority of three in a Parliament to which no more than 115 members could be whipped up, and neither Pitt or Fox thought it worth while to be present. Nor was Jenner treated as if his asserted services to mankind were soberly credited. "Yes," it may be said, "the world never recognises its true benefactors;" but the observation does not apply, for Jenner was profusely recognised, and received praise from his contemporaries which posterity hesitates to repeat. Nevertheless the praise, though profuse, was little more than verbal. Some expressed indignation at

the paltry award of £10,000, and proposed to start a national subscription, but no one took the initiative, and the national gratitude was not put to the test. Even the £10,000 was paid tardily. Writing to a friend on 3rd June, 1804, Jenner had to relate that—

> The Treasury still withholds the payment of what was voted to me two years ago; and now there are new officers, and it may yet be very long before a guinea reaches me from that quarter.

When at last the money was paid, nearly £1000 was deducted for fees, etc.; and, having the repute of the money, he was considered public property. As Dr. Baron records—

> The people of England seemed to think that the fee-simple of his body and mind had been purchased by the TEN THOUSAND POUNDS; and many an unjust and ungenerous intimation of this feeling was conveyed to him. To a mind like his, this was no small annoyance. He was called upon for explanations and opinions by every person who thought a direct communication with the Author of Vaccination an honour worth seeking, while they might have obtained all the information they wanted in his published writings.

So much was matter of course, but Jenner had worse to encounter. He took the fine talk of his medical and political friends *au sérieux*, bade farewell to Berkeley, and set up as London physician in Hertford Street, May Fair. The result we have in his own words—

> Elated and allured by the speech of the Chancellor of the Exchequer, I took a house in London for ten years, at a high rent, and furnished it; but my first year's practice convinced me of my own temerity and imprudence, and the falsity of the Minister's prediction. My fees fell off both in number and value; for, extraordinary to tell, some of those families in which I had been before employed, now sent to their own domestic surgeons or apothecaries to inoculate their children, alleging that they could not think of troubling Dr. Jenner about a thing executed so easily as vaccine inoculation. Others, who gave me such fees as I thought myself entitled to at the first inoculation, reduced them at the second, and sank them still lower at the third.

His fees did not amount to £350 a year, and he presently found himself nothing the better for the par-

liamentary grant, and involved in grave financial difficulties. He wrote to a friend, 2nd November, 1804—

The London smoke is apt to cloud our best faculties. I do not intend to risk the injury of mine in this way, unless occasionally for the transaction of business. The public has not the smallest right to require such a sacrifice of me. I have received no reward for showing them how to remove one of the greatest obstacles to human happiness; but, on the contrary, am loaded with a tax of more than £400 a year!

And to another correspondent—

I have now completely made up my mind respecting London. I have done with it, and have again commenced as village doctor. I found my purse not equal to the sinking of a £1000 annually (which has actually been the case for several successive years) nor the gratitude of the public deserving such a sacrifice. How hard after what I have done, the toils I have gone through, and the anxieties I have endured *in obtaining for the world a greater gift than man ever bestowed on the world before* (excuse this burst of egotism), to be thrown by with a bare remuneration of my expenses.

It was hard! People who attributed to Jenner the greatest discovery ever made, the preservation of from 36,000 to 45,000 lives annually in the United Kingdom, and the salvation of the human race from smallpox, were indeed entitled to have dealt with him more handsomely. He had sympathisers and candid friends. "Your liberality and disinterestedness every one must admire," wrote Mr. Benjamin Travers, "but you are sadly deficient in worldly wisdom. If you had undertaken the extinction of the smallpox yourself, with coadjutors of your own appointment, I am confident, you might have put £100,000 in your pocket; and the glory would have been as great and the benefit to the community the same." How that £100,000 was used to tantalise him! and yet, as Dr. Pearson pointed out, never any one showed on what practicable terms the immense sum could have been earned by means of cowpox.

CHAPTER XIII.

THE ROYAL JENNERIAN SOCIETY.

JENNER, jealous of Pearson, was anxious to supersede the Institution for the Inoculation of the Vaccine Pock established by him in 1799; but Jenner was what Scots call "a feckless creature," whose wishes rarely issue in fruit. After his success in Parliament, he did not remain in London to improve his opportunities, but retreated to domestic quiet at Berkeley and Cheltenham. His friends, however, were mindful of him, and Dr. Hawes, Mr. Addington, surgeon, Benjamin Travers, and Joseph Leaper met in Queen Street, City, 3rd December, 1802, and resolved to establish a "JENNERIAN SOCIETY for the Extinction of the Small-Pox." Mr. Addington transmitted the resolution of the meeting to Jenner, saying—

We look to your direction and assistance, and feel very desirous of knowing when it is probable we may have the pleasure of seeing you in town.

Joseph Fox of Lombard Street, dentist and enthusiastic promoter of the new inoculation, also wrote to him, 4th December, soliciting his co-operation—

The plan which is in agitation is of the most extensive and liberal kind. It is even expected that the Royal countenance will be gained; but much depends upon thee. All are looking toward thee as the proper person to lay the foundation-stone. It would be well if this could be done in the course of the present year, particularly as it is the memorable time when the practice received parliamentary sanction.

But the ease-loving Jenner was not to be drawn. He wrote to Mr. Addington from Berkeley, 10th December, 1802—

Your very obliging letter found me just returned with my wife and children to our pleasant home, where I promised myself a few weeks of domestic comfort after some years spent in constant anxieties.

This is the pull on one side. On the other is the delightful prospect held up to my view of an Establishment for the promotion of Universal Vaccine Inoculation—an establishment to which I have for years been looking forward with a longing eye.

I need not go farther into explanation, and shall only say, that if it be incompatible with the generous design to suffer me to remain here for the time I had allowed myself, I will certainly comply with the wishes of my friends and go to town. Yet it must be observed that I humbly conceive and ardently hope that my presence will not be absolutely necessary. I have written to my friend Dr. Lettsom and requested him to have the kindness to be (as far as such a thing is admissible) my representative. In his judgment on the present occasion I can place every confidence.

The letter describes the man. He did not like to be troubled—not even when action stood for the advancement of his own glory. As Pearson observed, "If Vaccination had been left to Jenner, it would never have come to anything." Benjamin Travers also wrote to him at the same time urging the necessity of his presence in London, but he was put off with similar excuses and with expectations of assistance from the public purse—

Government, I have no doubt, will give due support to so just and laudable an undertaking. I am warranted in this suggestion by a long conversation I had with Mr. Abbott, Speaker of the House of Commons, who said that after the investigation of the Parliamentary Committee he thought it became a public duty to form Institutions for Gratuitous Inoculation.

As Jenner was not to be had, the promoters set to work without him, and their triumph was complete when at a meeting in the London Tavern on 17th February, 1803, it was announced that his Majesty had graciously condescended to become the patron of "THE ROYAL JENNERIAN SOCIETY for the Extermination of the Smallpox:" that her Majesty had with great benignity acquiesced in the request to become patroness: that his Royal Highness the Prince of Wales and their Royal Highnesses the Duke of York, the Duke of Clarence, and the Duke of Cumberland, had evinced, in a most flattering manner, their willingness to accept the office of vice-patrons: that his Grace the Duke of Bedford had consented to fill the office of president; and that many prelates, noblemen, and gentlemen of the highest rank and respectability had agreed to be vice-presidents of the Society.

The approval of the Prince of Wales was conveyed in

a letter of the Earl of Egremont, over which Baron, Jenner's biographer (writing when the Prince had blossomed into George IV.), bursts into worship in capitals, as follows—

> The gracious and beneficent mind of the Illustrious writer is displayed in every line; and the whole is truly characteristic of those great qualities which continue to add lustre to his still more EXALTED STATION and shed so much of real glory on his REIGN.

Subscriptions flowed in freely. The Corporation of London gave £500, the East India Company £100, the Duke of Bedford £50, and guineas ten, five, two and one were contributed with a liberality that attested the fervour of the common credulity. But it was much easier to get money than to administer it with a nice adjustment of means to ends. The Jennerians, too, were over-organised. There were a Medical Council and a Board of Directors. The Medical Council consisted of twenty-five Physicians and twenty-two Surgeons of the first eminence in London, with Jenner for president and Lettsom for vice-president. Such mechanism could never work, and at the point where real business was to be transacted, an officer was selected of extraordinary character.

John Walker was born at Cockermouth in 1759, and was a school-fellow of Woodville, subsequently physician to the London Smallpox Hospital. After a rambling career as blacksmith, engraver, and school-master, he turned his attention to medicine, graduated at Leyden, associated with French revolutionists in the guise of a member of the Society of Friends; then accompanied Dr. Marshall in a vaccinating cruise to the Mediterranean, from whence, after a variety of adventures in war and weather, he appeared in London in 1802, habited as a Quaker with a long beard—an apparition in a clean shaven community. Joseph Fox, the dentist of Lombard Street, gave him the use of a part of his house, and there, in his own words, "I set up my VACCINIUM for the glorious cause." As soon as the Jennerian Society was initiated, Walker was put forward by Joseph Fox and

other Friends as inoculator-in-chief, and Walker made application in the following terms—

To the Jennerian Society.

Friends,—Perhaps there is not any individual who has greater reason to be gratified with the interest ye are taking in the Vacciole Inoculation than myself.

Of late years, the practice of it has been the chief business of my life, and I am partly indebted, during some of the last months, to the zeal of individual members of your Society for being enabled to continue it. They have sent patients to me from remote and distant parts of this extensive City, when, for want of notoriety, I might otherwise have been unemployed.

May I offer to you my services in this way: during the infancy of your Institution, you cannot do me a greater pleasure than to increase my number of patients; for where I now vacciolate tens, I could easily do the same for hundreds.

After this declaration, I hope you will consider the present address as neither unseasonable nor intrusive, but rather as a mark of unwavering zeal in the happy cause in which ye are now embarking.

Respectfully,

John Walker.

54 *Lombard Street*, 29. xii., 1802.

When the day of election arrived, four, out of many, were selected as candidates, one of them being Dr. Domeier, a German, strongly recommended by the Queen and Prince of Wales; but the Friends stood by their man, and Dr. Walker was appointed Resident Inoculator at the Central House of the Society in Salisbury Square with a salary of £200 a year, coal and candles, and liberty to take fees for private "vacciolation."

The promoters of the Society, operating under the prestige of Jenner's name, resolved to hold their annual festival on his birthday, the 17th of May; and at the first dinner in 1803 he was subjected to flatteries enough to turn any man's head who does not know the reckless insincerity that prevails on such occasions. It was the adulation connected with the formation of this Society that as much as anything induced Jenner to set up as west-end physician. The attempt of the middle-aged country doctor was the occasion of much grim humour, and his consequent embarassments were the concern of

his friends for many a day. Apart from the inherent difficulties of the enterprise (social rather than medical) Jenner was constitutionally deficient in method and assiduity. Wrapped up in his wife and family, business was always set aside when they claimed his affectionate regard; and to leave London for Gloucestershire for some domestic cause was in his eyes procedure that required no defence—all which might be amiable, but it constantly annoyed and frustrated his associates; and it is not thus encumbered that any man can expect to make way in the world. When the anniversary in 1804 came round, Jenner was at Berkeley, and when pressed to attend he wrote—

Though a post-chaise might bring up my body, my mind would be left behind. One cause of my absence, among many others, is the sad state of Mrs. Jenner's health. I cannot leave her even for a day with any comfort to my feelings. My friends, who honour the glorious cause of Vaccination by assembling on the 17th, will, I trust, admit my apology. It is my intention to collect a few staunch Vaccinists on that day at my cottage. I shall give them some roast beef, not forgetting a horn or two of good October. We shall close the day with bumpers of milk-punch to the health of the Friends of Humanity at the Crown and Anchor; and if it were not for the indisposition of my poor wife, we should roar like bulls.

If Jenner was idle and self-indulgent, Walker was the reverse. He was a fine specimen of the GENUS, *Fanatic*. Possessed with a lust for what he called Vacciolation, he had a brow of brass, nerves of steel, and habits like clockwork. Thirteen stations were opened in London where cowpox was inoculated gratis, and in eighteen months Walker was able to announce that 12,288 patients had been operated on, and that 19,352 charges of virus had been dispatched to the country and foreign parts; whereon Baron observes—

The effect of these exertions was immediately perceived by a striking diminution of the number of deaths from smallpox within the Bills of Mortality. In 1803 they amounted to 1173; in 1804 they were only 622. The contrast will appear still greater when it is considered that the deaths amounted to 2409 in the year 1800; and that the annual average of deaths for fifty years previously was 2018.*

* Baron's *Life of Jenner*, Vol. i. p. 577.

The passage is noteworthy as representative of many similar passages in the literature of Vaccination. It might be described as dishonest, but the craft is so transparent that the epithet would be extravagant. The probable explanation is, that Vaccination had come to be regarded as so unquestionably beneficial that *anything* might be asserted in its favour, and that *anything* was true. Else a child might have asked how 12,000 or 24,000 vaccinations could by any possibility affect an immediate diminution in the deaths from smallpox in a population of eight or nine hundred thousand. Baron would also lead his readers to suppose that the low mortality of 1804, namely 622, was unexampled, though with the Bills of Mortality before him, he might have seen that the deaths in 1797 fell to 522; and he knew that the low figure of 1804 was not maintained, but rose to 1685 in 1805. But as remarked, *any statement*, if only it be favourable to Vaccination, is expected to pass muster as veracious, and the public credulity justifies the expectation.

Let us look at the London Bills for ourselves, taking the last ten years of the 18th and the first ten years of the 19th Centuries, and try to discover what they teach.

Years.	Burials from all Diseases.	From Smallpox.	From Fevers.	From Measles.
1791 ...	18,760 ...	1747 ...	2013 ...	156
1792 ...	20,213 ...	1568 ...	2236 ...	450
1793 ...	21,749 ...	2382 ...	2426 ...	248
1794 ...	19,241 ...	1913 ...	1935 ...	172
1795 ...	21,179 ...	1040 ...	1947 ...	328
1796 ...	19,288 ...	3548 ...	1547 ...	307
1797 ...	17,014 ...	522 ...	1526 ...	222
1798 ...	18,155 ...	2237 ...	1754 ...	196
1799 ...	18,134 ...	1111 ...	1784 ...	233
1800 ...	23,068 ...	2409 ...	2712 ...	395
	196,801	18,477	19,880	2707

It is to be observed, that we have not here the record of the deaths in the whole of London, but merely the number of intramural interments, which diminished as a number of graveyards became gorged beyond capacity of decomposition and assimilation, and relief was sought in

the cemeteries of extra-mural parishes, such as St. Pancras and Marylebone. It is only thus that the diminishing number of burials (which ranged from 25,000 to 30,000 during many years of the 18th Century) is to be accounted for. In this light we have to consider the following table, where we note fewer burials, less smallpox, less fevers, but more measles.

Years.	Burials from all Diseases.	From Smallpox.	From Fevers.	From Measles.
1801	19,374	1461	2908	36
1802	19,379	1579	2201	559
1803	19,582	1202	2326	438
1804	17,038	622	1702	619
1805	17,565	1685	1307	523
1806	17,938	1158	1354	530
1807	18,334	1297	1033	452
1808	19,954	1169	1168	1386
1809	16,680	1163	1066	106
1810	19,893	1198	1139	1031
	185,737	12,534	16,204	5680

From whatever cause there was an abatement of smallpox, but it was a continuous abatement which had set in before Jenner was heard of; and at the same time we must repeat that at this day (when all swear by the unity of Nature and the correlation and convertibility of her forces) it is grossly unscientific to pick out smallpox from the zymotic diseases and deal with it as an independent entity. It is a fever among fevers, bred and propagated in the same conditions, and can never be studied apart from its associates without serious misunderstanding.

These Bills of Mortality, as compared with the more accurate statistics of our own time, are of little value; but, such as they are, they are constantly referred to, and their items used, as by Baron, as pretexts for most unwarrantable assertions. Any influence of Vaccination on the smallpox mortality of 1801-10 was practically nothing. Vaccination was limited to a few thousands, and those chiefly of the classes least subject to the disease. The great seething mass of metropolitan squalor, in which

smallpox and typhus were endemic, was untouched by the vaccine lancet. If the new practice did good, it was in discrediting and discouraging the culture of smallpox in variolous inoculation.

To return to the ROYAL JENNERIAN SOCIETY. Its halcyon-days were of brief duration. Enthusiasm abated, subscriptions fell off, cases of smallpox after vaccination came to be heard of, and serious illness and death consequent upon "the benign and harmless operation." Opponents waxed bold and could not be silenced. Then jealousies and dissensions began to operate within the Society. The financial secretary strove with the medical secretary. Dr. Walker's habits and eccentricities, viewed at first with amusement, excited irritation and disgust, whilst Jenner's easy-going mode of life and impecuniosity were a source of scandal and distrust. The climax was reached in 1806 when Jenner and Walker were set openly at loggerheads, and a fight to the death ensued.

Walker, it is to be said, never treated Jenner with respect. Like Pearson he took stock of his merits, and did not rate them highly, and would not listen to his dictation. "Vaccination," he used to observe, "is extremely simple as to facts, while, as to causes, it is entirely out of the reach of medical men with all their theories." Jenner, as president of the Medical Council, thought he had a right to be obeyed, but Walker was the last man in the world to yield obedience when he had formed an opposite conviction—

> Jenner [writes Baron] considered it his duty to admonish him, and repeatedly represented to him, in the most friendly manner, the mischievous tendency of his innovations. These remonstrances were unavailing, and he ceased to have any communication with Dr. Walker after the summer of 1805; submitting rather to lament in silence the fate of the Society than come before it as a public accuser.

Of course such forbearance could not last long, and instructions issued by Walker to the Nottingham Vaccine Institution in March, 1806, were made the occasion of an open rupture. Jenner brought Walker's conduct under the consideration of the Medical Council, and secured his

condemnation. The question was then referred to the General Court of the Society on the 25th of July, when a motion that Walker be dismissed from his office was negatived by a majority of three, Walker being supported by Sir Joseph Banks and Jenner by Dr. Sims. But the victory was not satisfactory to Walker, and on the 8th of August he put an end to the strife by sending in his resignation.

Baron's solemn account of the contest must appal every ingenuous reader. Jenner, it is written, regarded Walker's proceedings as of "the most dangerous character," as "placing in peril the safety of the practice," and "as likely to wreck the Society"; so that had he not retired Jenner would have been compelled to withdraw his countenance from Salisbury Square. As we read we exclaim, Whatever did the dreadful Doctor do? Here is Baron's answer—

It is unnecessary to mention the specific instances of misconduct which were established. They regarded even the very name of the affection; the method of managing the pustules; the characters of correct vaccination; the precautions to be observed in conducting the practice, etc., etc.

Moore states the offence plainly—

Walker's method of taking lymph was to cut open the vesicles, and to wipe out the contents with lint, in order to procure the fresh secretion. This harsh treatment of infants was the reverse of that which he was directed to employ; and as he was unalterable in his resolution, it was at length deemed necessary to remove him.*

Turning to the *Life of Walker*, by Dr. Epps, we have the difference 'twixt Tweedledum and Tweedledee still further illustrated—

Two different modes have been adopted in taking the matter of inoculation from the vaccinated subject: one, by making punctures round the outer part of the pock, Dr. Jenner's mode; the other, by removing the crust or scab from the centre of the pock, wiping out the fluid beneath it, and then taking the matter, indiscriminately, from any part of the whole substance of the pock, Dr. Walker's mode.†

* *History and Practice of Vaccination*, p. 212. By James Moore. London, 1817.

† *Life of John Walker, M.D.*, p. 88. By John Epps, M.D. Lond., 1831.

As in brawls and wars generally, the ostensible offence is rarely the true or entire offence, so when we revert to the events of 1805-6 we discover that Vaccination was being found out, and that Walker served Jenner's purpose opportunely as scape-goat. Walker's behaviour, too, constituted him a convenient victim. Many who cared nothing for his mode of "taking lymph" had been hurt by his scorn of their self-importance, and were ready to assist Jenner in effecting his humiliation. Mr. Cline, the surgeon, after listening to many speeches against Walker, summed up the indictment, "All they complain of are his *dress* and *address*." A naval officer, meeting Walker on 25th July, said, "I came to town to-day to hold up my hand in your support. You and Jenner do not agree over some trifles, and your enemies wish to turn the fact to your hurt, but they have been beaten. Is the man who launches a vessel the only one who can navigate her? If Jenner were to live for fifty years to come, he could never have the authority of your experience."

Jenner's victory over Walker was utterly disastrous: it destroyed the Royal Jennerian Society. The substantial supporters of the Society were the adherents of Walker, and with him they seceded, secured another house in Salisbury Square, and established THE LONDON VACCINE INSTITUTION with Walker for manager. The remnant of the Jennerian Society appointed James Sheridan Knowles, a young Irish surgeon, as Walker's successor, and for distinction purchased him the degree of M.D. from St. Andrews. He had the suavity that Walker disdained, and little else beside. He neglected his duties, and soon the traffic in the "benign fluid" was transferred to the new establishment. Ultimately the lease, fixtures, and furniture of the Jennerian house were disposed of, and a retreat effected to humbler offices, until in 1813 what remained of the Society was incorporated in Walker's concern.

Walker obtained much assistance from members of the Society of Friends, and the fact affords Moore (Jenner's

apologist) occasion for certain sneers. He describes the meetings in Salisbury Square as—

> Shaded with the Quakers' broad-brimmed hats; for their schismatic assiduity was most conspicuous, though their primitive meekness was indiscernible. In support of their friend, they argued slyly, wrangled tumultuously, and voted almost unanimously. Yet, in spite of this contentious pertinacity, the turbulent Quaker, on the motion of Dr. Jenner, was dismissed from his office, and peace was restored.

Dismissed he was not, and the peace that ensued on his resignation was destruction. The success of Walker's Institution (necessarily dependent on subscriptions) he accounts for by an anecdote like this—

> A noble Duke informed me that on a sultry day a steaming, squab, broad-faced man, in a Quaker's garb, with his hat on his head, entered his room, saying, "Friend, I am come on a charitable mission to request thy mite." The Duke, amused with the oddness of the salutation, desired him to be seated, and to explain his business. The Quaker wilily suppressed all mention of disputes in the Jennerian Society, and of the dismissal of Dr. Walker, which were the real causes for soliciting this subscription; and enlarged tediously on the utility of vaccination, and by awkward encomiums on Dr. Jenner, led the Duke to believe that the subscription was solicited for a Society approved by him. This cunning harangue drew forth the Duke's purse, which the Quaker spying, unrolled his list, and added his Grace's name as a decoy for others; and saying, "Friend, fare thee well," strutted out with an uncouth gait and an air of uprightness. By such artifices a large subscription was raised from those who prefer paying to inquiry; and in the meantime the Jennerian Society diminished in numbers, and, undermined by calumnies, declined to its downfall.*

It is not to be imagined, however, that the collapse of the Royal Jennerian Society disposed of Jenner and his party. There was Jenner to provide for: he could not with decency be forsaken: and there was a stock of vaccine virus to be kept up, for which pride forbade dependence on Walker's dispensary. It was in vain to appeal afresh to a benevolent public, whose confidence had gone elsewhere, and whose suspicions were excited. It was therefore determined to resort to Government for

* *History and Practice of Vaccination*, pp. 213-215.

help. The political influence of the Jennerian party was considerable, and we shall see to what purpose it was exerted.

ORIGIN OF THE TERM VACCINATION.

A new practice wants a new name, and it was some time before one was found for Inoculation with Cowpox. Dr. Walker made use of Vacciolation and to Vacciolate in 1802; but it was Richard Dunning, surgeon, of Plymouth, who introduced Vaccination and to Vaccinate. Jenner writing to Dunning, 2nd April, 1804, observed—

> The useful terms Vaccination and to Vaccinate, are undoubtedly yours, and as such I pronounced them at a meeting of the Royal Jennerian Society, when an M.D. present mentioned them as imported from the Continent.*

Vaccination is not as yet a term accepted everywhere. Among the uneducated we hear of being "cut for the cowpock," or simply of being "cut."

Whilst Vaccination was a useful word, it was, and is, often misapplied. Jenner's prescription of Horsegrease Cowpox was Equination rather than Vaccination; and when virus from the horse was employed neat, Equination was the accurate designation without question. Again, when virus was generated from Small-pox on heifers, the subsequent inoculation of the human subject was not Vaccination but Variolation, or at least Variolous Vaccination. The virus in public use at this day derived from Horsegrease Cowpox, Cowpox, Horsepox, Smallpox, Smallpox Cowpox, etc., etc., inoculated from arm-to-arm, in series prolonged and unsearchable, is called Vaccination; but it is Vaccination in faith or fancy, evidence to anything but uncertainty being unattainable.

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* Baron's *Life of Jenner*, vol. ii., p. 336.

CHAPTER XIV.

APPLICATION TO PARLIAMENT FOR JENNER'S RELIEF, 1806.

BARON relates an instance of Jenner's personal shyness and the mental torture he endured in prospect of a festival of the Royal Jennerian Society in which he was expected to take part. Speaking to Baron he said—

I can compare my feelings to those of no one but Cowper, the poet, when his intellect at last gave way to his fears about the execution of his office in the House of Lords. It was reading Cowper's Life, I believe, that saved my own senses by putting me fully in view of my danger. For many weeks before the meeting I began to be agitated, and, as it approached, I was actually deprived both of appetite and sleep; and when the day came, I was obliged to deaden my sensibility and gain courage by brandy and opium. The meeting was at length interrupted by a dissolution of Parliament, which sent the leading people to the country; and what was at first merely postponed was ultimately abandoned to my no small delight and satisfaction.*

Something of this timidity was no doubt due to his consciousness of playing a deceitful part, and to the appropriation of honour and reward to which he had no just claim. Like many shy men, Jenner could be insolent with pen and ink—it was face to face courage to which he was unequal; and this timidity, with other reasons, accounted for his failure as a London physician—as "the Cowpox Doctor," as he was commonly described. Those whose encouragement had helped to lead him to disaster, those who were pleased to believe that he had taught mankind how to escape from smallpox, and several of his professional brethren, were all concerned to help him out of his difficulties, and, if possible, at the public expense. The Duchess of Devonshire wrote to Mr. Angerstein—

I had not forgot your kind interest about Jenner. I spoke to the Duke, the Prince, and Morpeth, and they will all do what you think best; but Morpeth has undertaken to make inquiries whether it is not possible to bring his case again before Parliament. He thinks

* Baron's *Life of Jenner*, vol. ii. p. 162.

if that could be done, it would be more satisfactory than any subscription. I desired him to find out how Pitt was *really* inclined in the matter, and I only waited the result of these inquiries to write to you.

At the same time Jenner himself was not inactive, and managed to advance his own interest effectually. He came to London, 10th May, 1805, and at once saw Lord Egremont, and enlarged upon the losses he had incurred in the public service; the result being a determination to appeal afresh to the liberality of the House of Commons. Moreover he succeeded in winning over the Chancellor of the Exchequer in the manner he thus describes—

During my residence in town in the summer of 1805, Lady Crewe happened in conversation to tell me how much Lord Henry Petty wished for a conference with me on the vaccine subject; and that she would like to bring us together. We met at her villa at Hampstead, and went so fully into the matter that his Lordship, convinced of the injury I had sustained, expressed his determination to bring something forward in the ensuing session. Before the session arrived Mr. Pitt died, and Lord Henry Petty became Chancellor of the Exchequer. In the early part of 1806, I again saw his Lordship, and found that his ardour in my cause had suffered no abatement. This was soon after proved by his Lordship's motion in the House.*

Lord Henry brought Jenner's case before the Commons on the 2nd of July, and recited the fabulous matter communicated to him with the force of personal conviction. Vaccination was a preventive of smallpox, that loathsome disease which spreads death throughout the world. It was in 1777 that Jenner obtained some obscure knowledge of the peculiar virtue of Vaccine; and from that period he meditated profoundly on the subject, accumulated information, and instituted cautious and decisive experiments. At length he perfected his discovery, and published it for the benefit of mankind. Lord Henry then proceeded to relate the triumphs of Vaccination, not only throughout Europe, but China and India! Wherever the practice was introduced, there smallpox

*Baron's *Life of Jenner*, vol. ii. p. 55.

diminished and vanished. There was Vienna, for instance, where the average mortality from smallpox was 835 annually. Vaccination was commenced in 1799, and the mortality dropped in 1802 to 61, in 1803 to 27, and in 1804 to 2. Thus in Vienna there was an annual salvation of 833 human beings. This undoubted fact had made a deep impression on his mind [as well it might!] But, alas! what was doing so much good abroad was neglected and distrusted at home. In the City of London the deaths from smallpox had been on an average 1811 annually, and this mortality had been gradually reduced by Vaccination to 629. Through the diffusion of the disease by variolous inoculation, the deaths last year (1805) had been raised from 629 to 1685. This dreadful destruction of life, especially shocking when a certain preventive existed, demanded their most serious attention, and in the situation he felt bound to propose a plan to bring forward a mass of evidence, to elicit the truth, and enlighten the public. He would therefore move—

That an humble Address be presented to His Majesty, praying that he will be graciously pleased to direct His Royal College of Physicians to inquire into the state of Vaccine Inoculation in the United Kingdom, and to report their opinion as to the progress it has made, and the causes which have retarded its general adoption.

Should this report from the Physicians corroborate the favourable opinion of Vaccination entertained by foreign nations, it must greatly tend to subdue those prejudices against the practice which have been fomented here. And in that case, the House may consider whether the ingenious Discoverer has been remunerated conformably to the liberal spirit and character of this country.

Dr. MATHEWS seconded the motion, and contrasted the safety of the vaccine with the dangers of variolous inoculation. He had no doubt the country would hasten to testify still further its gratitude to the learned physician to whom they owed this inestimable benefit.

Mr. WILBERFORCE did not approve of the reference to the College of Physicians. He would have preferred an investigation by a committee of the House, and another

committee of the House of Lords. The opinions of such unbiased persons would be more congenial to the feelings of the people, and far more satisfactory than any medical report from the College of Physicians. The latter might be suspected of being influenced by professional motives, whereas a report from the Lords and Commons would be universally received as proceeding from a pure desire to promote the general good. It did not surprise him that Vaccination had made less progress at home than abroad. The resistance was due to that curious principle in the human mind which accepts what comes from afar with admiration whilst what is familiar is neglected and despised. The remedy would be found in diffusing information as to the complete success of Vaccination in foreign countries. They would thus disperse those absurd prejudices which are engendered and fostered by certain selfish and interested individuals.

Mr. WINDHAM did not concur in the advice of Mr. Wilberforce to refer the matter to a parliamentary committee. It was a question for medical men. To a committee of the House the adage might be applied, *Ne sutor ultra crepidam.* Let them enforce with their approval the report of the physicians, and then let them proceed to remunerate that meritorious individual to whom society owed the utmost gratitude. He could not help thinking he had not yet received what was due for the expense and trouble the discovery had cost him.

Mr. BANKS was of a sceptical turn. He wished the motion had been made earlier in the session, for then he should have supported the suggestion of Mr. Wilberforce. They wished to know whether Vaccination really did afford reasonable security from smallpox. It was not a question for medical men for which the House was incompetent. They were as capable of determining the point, and setting it clearly before the public, as the most learned body that ever existed. He wished too, since the motion would be carried, that the Royal College of Surgeons might be united with the Physicians in the production of the report. As for Dr.

Jenner, if Vaccination were as efficacious as asserted, he might be left to find his reward in its practice.

Lord HENRY PETTY in summing up the debate expressed his satisfaction with the general approval extended to his motion. He did not think the House competent to form a judgment on Vaccination. They could not decide whether cowpox was genuine or spurious, or whether the affection resulting from its inoculation was regular or otherwise; nor could they determine whether eruptions that might break out after Vaccination were induced by the operation, or were due to other causes. Such delicate questions could only be solved by medical men. As for the proposal to annex the Royal College of Surgeons to that of the Physicians, it was superfluous. The College of Physicians would not only consult the Surgeons, but the Medical Colleges of Scotland and Ireland likewise. If the report should prove favourable, it would then be his duty to propose that remuneration be awarded to Dr. Jenner for his inestimable discovery.

The motion was then put from the Chair and agreed to unanimously.

It is needless to remark that the report of the College of Physicians was a mere formality toward a vote of credit for Jenner's relief. He lay heavy on many hands, and none were more anxious to be relieved from the pressure than certain influential members of the College whose report was solicited. The operation was skilfully planned for the end designed, and Lord Henry Petty allowed himself to be primed and applied with singular facility: but public men have often to deliver as of themselves what is communicated by others, and to stand responsible for absurdities of which they are unconscious.

CHAPTER XV.

REPORT OF THE ROYAL COLLEGE OF PHYSICIANS.

THE Report of the Physicians appeared on the 10th April, 1807, a verbose document, wherein assertion and conjecture were awkwardly intermingled. As to the extension of the practice, it was said—

During eight years which have elapsed since Dr. Jenner made his discovery public, the progress of Vaccination has been rapid, not only in all parts of the United Kingdom, but in every quarter of the civilised world. In the British Islands some hundred thousands have been vaccinated; in our possessions in the East Indies upwards of 800,000, and among the nations of Europe the practice has become general.

Professional men have submitted it to the fairest trials, and the public for the most part have received it without prejudice. The testimony in its favour has been most strong and satisfactory, and the practice of it, though it has received a check in some quarters, appears to be upon the increase in most parts of the United Kingdom.

From the Report it appeared that the opposition to Vaccination proceeded from the Inoculators; and the document may be described as a charge against the old practice as much as a positive defence of the new—

However beneficial the inoculation of the Smallpox may have been to individuals, it appears to have kept up a constant source of contagion, which has been the means of increasing the number of deaths by what is called the natural disease. It cannot be doubted that this mischief has been extended by the inconsiderate manner in which great numbers of persons, even since the introduction of Vaccination, are every year inoculated with Smallpox, and afterwards required to attend two or three times a-week at the place of inoculation, through every stage of their illness.

Some Inoculators asserted that Vaccination produced "new, unheard-of, and monstrous diseases," and made use of pictures to excite terror and disgust—

Publications with such representations have been widely circulated, and though they originated either in gross ignorance, or wilful misrepresentation, yet have they lessened the confidence of many, particularly of the lower classes, in Vaccination.

Whatever the character of Vaccination—had the claim made in its favour been a true claim, still the chief resistance to its practice would have consisted in the common apathy—

> The lower orders of society can hardly be induced to adopt precautions against evils which may be at a distance; nor can it be expected from them, if these precautions be attended with expense. Unless, therefore, from the immediate dread of epidemic Smallpox, neither Vaccination or Inoculation appears at any time to have been general, and when the cause of terror has passed by the public have relapsed into indifference. It is not easy to suggest a remedy for an evil so deeply implanted in human nature.

The suggestion was, however, made that Vaccination should be offered gratis, but at the same time it was the opinion of the College that until Variolous Inoculation was superseded or prohibited, "it would be impossible to prevent the constant recurrence of Natural Smallpox."

The recommendation of Vaccination gratis provoked the wrath of Dr. Moseley—

> Gratis! [he exclaimed]: Why, every person knows that for years past in almost every street of London, signs or boards on the sides of houses, or on Methodists' shops, or in apothecaries' windows, have invited the ignorant multitude to gratuitous Vaccination. I have seen as many gratis Cowpox hand-bills, gratis puffs, gratis pathetic sermons and addresses, and gratis station advertisements as would load an ox. What does the College think of the mountebank Jennerian placard, dispersed on walls and alleys, and among all the blackguard public houses in town and country, and hung up in the shop or parlour of every Cowpoxer in England with Their Majesties' Names and those of Their August Family audaciously emblazoned upon it? *

The Report of the College is interesting as a historic confession and a mark of progress. The physicians who drew it up were the same men who in 1800 professed their unlimited confidence in Vaccination, whilst as yet they knew little about it, proclaiming in the newspapers that they considered it their duty to declare—

That those persons who have had the Cowpox are perfectly secure from the future infection of the Smallpox.

* *Review of Report on Vaccination.* By Benjamin Moseley. London, 1808.

From a profession so unqualified an absolute retractation was not to be expected; but experience had begotten caution, and it is instructive to remark with what qualifications the retreat from the original position was attempted. Thus—

> The security derived from Vaccination *if not absolutely perfect* is as nearly so as can perhaps be expected from any human discovery; for among several hundred thousand cases, with the results of which the College has been made acquainted, *the number of alleged failures has been surprisingly small*, so much so as to form no reasonable objection to the general adoption of Vaccination.

The Report was not the deliverance of men possessed with the confidence of 1800: throughout there was manifest the failing conviction which evades responsibility and seeks for confirmation from sources external to itself. After a reference to the Variolous Test, the Report ran on—

> It appears from numerous observations communicated to the College, that those who have been vaccinated are secure from the contagion of epidemic Smallpox. Towns and districts of country in which Vaccination had been general, have afterwards had Smallpox prevalent on all sides of them without suffering from the contagion. There are also in the evidence a few examples of epidemic Smallpox having been subdued by a general Vaccination.

The liability to confound coincidence with cause was not unknown in 1807, and might have been suggested as a possible explanation of the cessation of a variolous epidemic contemporaneously with Vaccination; although at the present day Vaccination, when Smallpox is epidemic, is known to do little else than invite and extend the malady.

How the general (that was to say partial) Vaccination of certain towns and country districts secured universal exemption from Smallpox, the Physicians failed to explain. Extraordinary tales of Vicarious Vaccination were current and piously received. If a fraction of an urban or rural community happened to be vaccinated (usually a fraction least likely to be troubled with Smallpox in any event) and Smallpox did not break out, or did not widely prevail, the salvation of the community

was ascribed to the Vicarious Vaccination. The phenomenon has, strange to say, escaped the attention of theologians, although medical men constantly attest its occurrence.

Ruefully was it conceded that Vaccination was not an absolute preservative from Smallpox, but the pain of concession was softened with the plea of mitigation—

In *almost* every case where Smallpox has succeeded Vaccination, the disease has varied much from its ordinary course; it has neither been the same in violence, nor in the duration of its symptoms, but has, *with very few exceptions*, been remarkably mild, as if the Smallpox had been deprived, by the previous vaccine disease, of all its usual malignity.

It goes without saying, that such a statement was quackish romance. How could a physician know that any case of Smallpox had been made milder by Vaccination? for how could he know how severe the disease would have been without Vaccination? Any ground of comparison was wanting. Smallpox is an eruptive fever of wide degrees of intensity—slight as to be a trivial ailment, severe as to be inevitably fatal. "So true," wrote Dr. Wagstaffe in 1722, "is that common observation, that there is one sort in which a nurse cannot kill, and another which even a physician cannot cure." Yet every case of mild Smallpox after Cowpox came into fashion was placed to the credit of Vaccination!

Some writers [the Report continues] have greatly undervalued the security Vaccination affords, while others have considered it to be of a temporary nature only; but if any reliance is to be placed on the statements laid before the College, its power of protecting the human body from Smallpox, *though not perfect indeed*, is abundantly sufficient to recommend it to the prudent and dispassionate. The opinion that Vaccination affords but a temporary security is supported by no analogy in Nature, nor by the facts which have hitherto occurred.

The analogy of Nature was a treacherous support, whilst the Physicians did not foresee the time when their successors would plead the fact of the temporary security of Vaccination as a reason for systematic Re-Vaccination.

It is not difficult to discern between the lines of the Report a spirit of doubt and hesitation. Those who framed it had gone too far to turn back; there was Jenner on their hands; and a public ready to hoot if there was any open apostasy. The outlook at home was not encouraging, but there was the Continent, yea more, the wide world itself wherein to cover the reproach of failure—

> They could not be insensible [said the Physicians] to the confirmation they receive not only from the introduction of Vaccination into every part of Europe, *but throughout the vast Continents of Asia and America.*

The vast Continents of Asia and America! A fine phrase—a very fine phrase, with more comfort in it than scoffers might imagine.

In the Report we detect one good service, namely, the explosion of Jenner's fiction about Spurious Cowpox. When Vaccination was first brought forward, cases were adduced of Smallpox after Cowpox. Jenner at once asserted that the Cowpox in such instances must have been spurious, for Smallpox after genuine Cowpox was impossible; and Spurious Cowpox was thenceforward freely used to baffle inquirers and to account for failures. Spurious Cowpox served the ends of the Vaccinators magnificently, but by and by it began to have awkward consequences. Genuine Cowpox was said to be harmless —it was the Spurious that was ineffective or worked mischief; and the Inoculators plied the terror of Spurious Pox against Vaccination. It therefore became necessary to clear Spurious Cowpox out of the way, and Jenner, before the College of Physicians, pressed upon the point, "owned up," as Americans say, and authorised the following explanation—

> Some deviations from the usual course have occasionally occurred in Vaccination, which the Author of the practice has called Spurious Cowpox, *by which the public have been misled, as if there were a true and a false Cowpox;* but it appears that nothing more was meant than to express irregularity or difference from that common form and progress of the vaccine pustule from which its efficacy is inferred.

Mark! Here was a third definition of Spurious Cowpox by Jenner.

First, in the *Inquiry* of 1798, he described Spurious Cowpox as eruptions on the cow underived from horsegrease, producing no erysipelas when inoculated on the human subject, and without effect against Smallpox. True Cowpox was generated from horsegrease, and from horsegrease only.

Second, in the *Origin of the Vaccine Inoculation* of 1801 all reference to horsegrease was dropped for commercial reasons, whilst the existence of Spurious Cowpox was reasserted "as some varieties of spontaneous eruptions upon the cow."

Third, before the Physicians in 1807, he removed the spurious disease from the cow altogether, saying, nothing more was meant by Spurious Cowpox than variations in the form and progress of vaccine pustules on the arms of the vaccinated!

In short, to vary the phrase of Betsy Prig, "There never was no Spurious Cowpox." Slippery, very slippery, was the immortal Jenner.

With the report of the Royal College of Physicians were delivered reports from the London College of Surgeons, and from the Edinburgh and Dublin Colleges of Physicians and of Surgeons.

The report from the London College of Surgeons was considered most unsatisfactory, and could its tenor have been foreseen, the Jennerians might never have asked for it. 1100 circulars were dispatched on 15th December, 1806, to all the members of the College whose addresses were known in the United Kingdom, submitting the following questions—

1st. How many persons have you vaccinated?
2nd. Have any of your patients had Smallpox after Vaccination?
3rd. Have any bad effects occurred in your experience in consequence of Vaccination? and if so, what are they?
4th. Is the practice of Vaccination increasing or decreasing in your neighbourhood? if decreasing, to what cause do you impute it?

To the 1100 circulars only 426 replies were received.

Why nearly two-thirds of the members kept silent when at the outset they were converted in multitude to Vaccination, was left unexplained. The replies were thus summarised by the Board on 17th March, 1807—

The number of persons stated in such letters to have been vaccinated, is 164,381.

The number of cases in which Smallpox had followed Vaccination is 56.

The Board think it proper to remark under this head, that, in the enumeration of cases in which Smallpox has succeeded Vaccination, they have included none but those in which the subject was vaccinated by the surgeon reporting the facts.

The bad consequences which have arisen from Vaccination are—

66 cases of eruption of the skin, and
24 of inflammation of the arm, whereof
3 proved fatal.

Vaccination, in the greater number of Counties from which reports have been received, appears to be increasing: in the Metropolis it is on the decrease.

The principal reasons assigned for the decrease are—

Imperfect Vaccination,
Instances of Smallpox after Vaccination,
Supposed bad consequences,
Publications against the practice,
Popular prejudices.

The report of the Edinburgh College of Physicians disowned acquaintance with Vaccination, the practice being entirely in the hands of surgeons and other practitioners—

With a view, however, to publish their conviction of the immense benefits which have been, and which will in future be derived to the world, from Inoculation for the Cowpox, they had spontaneously and unanimously elected Dr. Jenner an honorary Fellow of their College, a mark of distinction which they very rarely confer, and which they confine almost exclusively to Foreign Physicians of the first eminence.

The report of the College of Surgeons, dated 3rd March, 1807, left nothing for the Jennerians to desire. The Edinburgh surgeons were satisfied from their own experience that Vaccination constituted a permanent security from

Smallpox, and they had observed no ill consequences from the practice. Vaccination commenced in Edinburgh in 1801, and was now so general in the city—

That for two or three years past, Smallpox has been reckoned rather a rare occurrence, even among the lower order of the inhabitants, *unless in some particular quarters about twelve months ago.* Among the higher ranks of the inhabitants the disease is unknown.

Rare, unless in some quarters about a year ago! We turn to the report of the Edinburgh Dispensary for 1805, and there we read—

The loathsome disease has unfortunately been very prevalent in several quarters of the city.

And this coincidently with extensive Vaccination to which apparently there was no active opposition! We have also to remember in this connection the statement of Professor Alexander Monro in 1765, that "the inhabitants of Scotland generally have Smallpox in their infancy or childhood; very few adults being seen in this disease"; and that in Edinburgh, with conditions strongly favourable to Smallpox, the mortality from the disease was on an average little more than a hundred a year. The Edinburgh physicians knew nothing practically of Vaccination, and we see how the Surgeons, who did know, shaped their evidence.

The Dublin College of Physicians echoed the fashionable opinion "that Cowpox Inoculation was safe, and fully answered its purpose." They were "willing to allow that doubtful cases had occurred of Smallpox after Vaccination, but on minute investigation, these supposed instances originated generally in misrepresentation, or the difficulty of discriminating between Smallpox and other eruptions." Rather awkwardly, seeing how the opposite opinion was in vogue, they professed their faith in Variolous Inoculation—

The Smallpox is rendered a much less formidable disease in Ireland by the frequency of Inoculation for it, than in other parts of His Majesty's dominions, where prejudices against Inoculation have prevailed. Hence parents, not unnaturally, object to the

introduction of a new disease, in the shape of Vaccination, preferring to trust to the practice with the mildness and safety of which they are well acquainted.

The Dublin College of Surgeons showed themselves more fully abreast of the time. They had nothing to say for Inoculation, but testified their confidence in Vaccination, and how its practice was increasing in Ireland. From 1800 to 1806 a total of 14,335 had been "inoculated with vaccine infection" at the Dublin institutions, and many elsewhere—

Cowpox has been found to be a mild disease, and rarely attended with danger, or any alarming symptom, and *the few cases of Smallpox which have occurred in Ireland after supposed Vaccination*, have been satisfactorily proved *to have arisen from accidental circumstances.*

Arisen from accidental circumstances! Thus was the divine illumination of experience veiled and denied!

Fortified with this budget of questionable evidence, the Government proceeded to claim from the House of Commons a second endowment for Jenner.

CHAPTER XVI.

JENNER RELIEVED—1807.

WHILST the Royal College of Physicians were preparing their report, there was perturbation in the political world. Dull and bigoted George III. refusing on the pretext of his oath to concede to Roman Catholics the rights of citizens, a change of administration ensued, and Mr. Perceval, a man after the King's own heart, replaced Lord Henry Petty as Chancellor of the Exchequer, and proceeded to give effect to the plan for relieving Jenner; a purpose for which the report "On the State of Vaccine Inoculation in the United Kingdom" was merely a blind.

On the 29th July, 1807, the House of Commons being

in Committee of Supply, Mr. PERCEVAL moved that Dr. Jenner be awarded a second sum of £10,000 for his matchless discovery. Smallpox was one of the greatest afflictions of mankind, from which hardly any one escaped. For this dreadful malady, Jenner had invented a preventive, unknown before, or if known, which had never been published. He did not therefore think the Committee would consider his proposal extravagant; indeed it was rather an act of justice than of liberality. Those who had read the Report of the Physicians would recognise the immense advantages of the new practice. As for its inconveniences, they were as nothing to those which attended Variolous Inoculation, and the few mistakes recorded were due to ignorance and carelessness. It might be objected by those who adhered to Mr. Malthus, that nothing was gained by saving lives from pestilence; for deaths were not losses where means of subsistence were inadequate; but for his part he would disregard the argument even if it were true. It was much better to follow the dictates of their hearts, and preserve life whenever it was within their power. He had often heard that the true riches of a state were its inhabitants. But he would not attempt to measure Jenner's award by the number of lives that his invention would preserve to the world. If he did so, what sum would they have to offer! All he need say was, that the £10,000 proposed represented no more than a moderate acknowledgment of labour and genius devoted to the service of humanity.

Mr. SHAW LEFEVRE opposed the motion. He had thought the former application for £20,000 excessive, and had concurred with those who reduced it to £10,000. He had moreover acquiesced in the smaller sum by reason of his faith in the report of the Committee of the House on the New Inoculation, but he now discovered that many of the statements in that report were erroneous. It attested that Vaccination was an infallible preventive of smallpox, whilst the report of the Surgeons now admits 56 failures! The first report stated that no

disease followed Vaccination, whilst now it is confessed that scrofula and other alarming symptoms are its occasional sequences! The report thus prejudicial to Vaccination nevertheless argues in its favour, and he would like to call witnesses to the bar of the House who would make manifest still further its inconsistencies and inaccuracies. At this late period of the session, it was not right to vote away such an amount of public money. [Such "late periods" are, however, always selected for jobs.] Besides, it was generally known that Benjamin Jesty of Worth in Dorsetshire discovered the use of cowpox long before Jenner, and if the House was resolved to be liberal, the reward should be shared with Jesty, or with Jesty's family. He should oppose the vote, but he did not say that he would always do so. His purpose was to gain time for more careful inquiry.

Lord HENRY PETTY, who had first moved in the matter, came to his successor's support. He had no doubt as to the efficacy of Vaccination, nor as to Jenner being its discoverer. His difficulty was to find a rule for the justice of the case; for whoever considered the value of the discovery must perceive that it would be impossible for them to deal generously with the discoverer. His service to mankind was entirely beyond any financial estimate. It was objected that Vaccination was not infallible. He replied that absolute, never-failing perfection ought not to be expected from any human device: they should rest well satisfied in the approximation to infallibility that belonged to Vaccination. Its daily benefits were numberless. Multitudes of seamen, soldiers, and citizens of every description had been saved by it, and in contemplating its future effects on the human race, the mind was lost in amazement and gratitude. How then should they presume to talk of liberality towards Jenner, the benefactor! They should recollect how he stands in the estimation of the world, how they were acting in view of all nations, and how their own characters were at stake in their demeanour towards

him. As to Malthus there was a misapprehension. He had taught nothing that forbade the extinction of an infectious disease which so greatly reduced human happiness. In their concern for Vaccination, the House should not forget the mischief that was still wrought by inoculation with smallpox. Zealous as he was for the new practice, he had no wish to meddle with what others might imagine (however absurdly) tended to their own preservation and that of their families, but no one had a right to endanger the lives of others. It was proved beyond dispute that those who were inoculated with smallpox diffused the fatal contagion by going abroad, or being carried abroad. He thought, therefore, it was not only the right, but the duty of the State to oblige those who were infected with smallpox to keep within doors until complete recovery. He would not move an amendment to the resolution, but would have no hesitation in acceding to a larger sum.

General TARLETON could not withhold his tribute of praise from the author of this blessing to mankind. To his knowledge, it had saved the lives of many in his Majesty's service. Soldiers could march and perform every military duty when under the process of vaccination. It had been said that gentlemen in the army had no respect for anything save success in war, but he thought that many officers knew how to admire Jenner, the preserver of millions, and to allow that in future ages his glory would exceed the renown of the greatest warriors.

Mr. STURGES BOURNE denounced the practice of inoculating out-patients at the Smallpox Hospital whereby the disease was systematically perpetuated and diffused throughout the community. He thought the legislature would be as much justified in taking measures to prevent this evil by restraint, as a man would be in snatching a firebrand out of the hands of a maniac just as he was going to set fire to a city.

Mr. HAWKINS BROWNE confessed with shame that he had voted for £10,000 instead of £20,000 in 1802; but

at that time he little knew the extent of Jenner's service to the human race.

Mr. EDWARD MORRIS did not think that even what had been said sufficiently set forth their debt of gratitude to Jenner. His discovery afforded a reasonable expectation of the extermination of smallpox, and the merit of the transcendent discovery was all his own. Inoculation in the old mode mitigated the disease in a few, and spread it in full fury over many. It was therefore a curse to mankind instead of a blessing. The Smallpox Hospital in its practice of inoculation, was a source of pestilence and a multiplier of victims to this deplorable distemper. The pre-eminent distinction of Vaccination was that it preserved its subject and injured no one. This unspeakable blessing they owed to Jenner, nor had the least improvement been effected upon his original and carefully matured prescription. They were bound to consider how he had abandoned the lucrative pursuit of his profession, and surrendered many years of his life for the good of his country and mankind. He would therefore submit an amendment to the resolution before the Committee, that the grant be £20,000 instead of £10,000, to mark their sense of Jenner's merits and to place him in a state of independence.

The amendment was warmly supported by Mr. Wilberforce, Mr. Windham, Sir John Sebright, and Mr. Herbert.

Mr. PERCEVAL, as Chancellor of the Exchequer, stood to his resolution, but with indifferent arguments. It was without precedent that a vote recommended by Government should be thus increased. He admitted that Jenner was entitled to much more than they could afford, but it was also without precedent that so great a sum as £30,000 (inclusive of the former vote) should be bestowed on any discoverer.

Mr. WILLIAM SMITH would not submit to these objections. He recited the triumphs of Vaccination in Asia and America, and said it was true as of old that a prophet had no honour in his own country. [An observation

singularly inapplicable to Jenner.] He urged the Committee to vote for the larger sum, and said that whilst the Chancellor of the Exchequer might in his public capacity protest, yet in his secret heart he would not be displeased if overborne by the sentiment of the House, of the country, and of the world.

Mr. WHITBREAD begged the Committee to bear in mind that Jenner had scorned to monopolise Vaccination, and had thereby sacrificed a great fortune. He called on the House to vote for the larger sum. Vaccination furnished the means for lessening the poor rate. Reduced small-pox signified fewer deaths, fewer orphans, fewer widows. Vaccination meant better health for the poor and more money in the pockets of the rich. They would excuse this appeal of his to the cupidity of the landed interest inasmuch as he had been anticipated in the exhibition of loftier considerations. He also wished to relieve the House from a renewal of this question. Let them reward Jenner once for all, and liberally: and remember that what was called economy in this connection, if practised by the House, would be, in the eye of the world, their disgrace.

Others spoke in a similar strain, and when the House divided, 60 voted for Mr. Morris's amendment, and 47 against it, £20,000 being carried by a majority of 13. Including the £10,000 voted in 1802, Jenner was thus awarded £30,000 of public money, in times, too, of war and scarcity.

The debate, it will be observed, was conducted in a House of 107 members at a late period of the session, and the variations among the speakers consisted in degrees of extravagance and credulity. The fabulous matter as to Jenner personally affords curious evidence of the manner in which legends originate in the presence of contemporaries, and how they come to be repeated with the fervour of good faith by men whose competence and honesty might be taken for unimpeachable. Jenner's party had whipped up their adherents, and the issue was sedulously arranged for; but because they had their way

it need not be assumed that it was necessary to circumvent any active adversaries. Apathy was their chief difficulty. There was little to be got out of cowpox by the ordinary politician; and then, as now, the average M.P. rarely committed himself to any project that did not obviously make for his popularity. As for the enthusiasm for Vaccination displayed by the speakers in the House, we have to recollect that they were not converts to the practice *per se*. No really new discovery was ever received with such an instant chorus of approbation by the mob, educated or uneducated. They were one and all bred under the severe and dangerous practice of Variolous Inoculation, whereof Vaccination was no more than a modification with a seductive promise of equal or greater security from smallpox, and exemption from its perils and annoyances. Unless this prepossession be allowed for, the conduct of Parliament toward Jenner cannot be rightly understood. There was not a word uttered against Vaccination from the ground which physiologists at this day occupy, for that ground, in a scientific sense, was as yet unknown. Smallpox was a mysterious visitation to be mysteriously dealt with—dodged, if possible, by medical artifice; and not, as we are persuaded, a crisis of impurity in the blood induced by foul conditions of life, which cannot be better disposed of than in the course of nature by eruptive fever. If we could suppress smallpox (in any other way than by the removal of its causes) we should merely alter its manifestation and have to accept it in some other and aggravated form of disease.

CHAPTER XVII.

VACCINATION ESTABLISHED AND ENDOWED.

JENNER provided for, his adherents had yet another end to achieve, namely, their own release from the burden of the Royal Jennerian Society, paralysed by the secession of Dr. Walker and the Friends and the establishment of the London Vaccine Institution. At first they had endeavoured to discredit the new Institution, even to the extent of distributing hand-bills like the following in the streets—

A CAUTION.

To persons desirous of obtaining INOCULATION for the Cowpox Gratis under the sanction of

THE ROYAL JENNERIAN SOCIETY.

Whereas, Doctor JOHN WALKER has, under various pretences, obstructed persons going to the Central House of this Society, the Public are hereby warned to be upon their guard against any insidious representations, the connection between Dr. WALKER and the Society having ceased, and Dr. KNOWLES having been appointed the Resident Inoculator at the Society's House, No. 14 Salisbury Square.

By Order of the Directors and Medical Council, 9th October, 1806.

It was all in vain. Walker was preferred to Sheridan Knowles backed by Jenner, whose friends had no liking for the support of the Society out of their own pockets. It was therefore planned to resort to Parliament for an annual subsidy so as dispense with the necessity of subscriptions. The managers of the London Vaccine Institution, learning what was on foot, naturally argued that if Government was to be thus propitious, it was they who had the better claim to assistance, and therefore prepared a petition setting forth their exertions in spreading Vaccine Inoculation. This interference with their scheme filled the Jennerians with fury, and Mr. JOHN FULLER undertook to speak their mind in the House of Commons. When, therefore, on 2nd June, 1808, Sir THOMAS TURTON presented the petition, FULLER sprang

to his feet and denounced it, saying a grosser forgery had never been submitted to the House.

The SPEAKER interposed. The petition had not been read. When it was, the House would be enabled to judge of its contents. Mr. FULLER resumed his seat amid general laughter. The petition having been read—

Mr. FULLER apologised for his abruptness. The petition was a gross cheat, a wicked trick to swindle the public; or, if it was not absolute swindling, it went very near the wind. When they came to solicit his subscription, he thought they represented some respectable corporation, but what did they turn out to be? A parcel of Quakers, or Presbyterians, or whatever else they were called. They had got five guineas from him, but the moment he detected them, he threatened them with a Bow Street officer and a charge of swindling, which soon frightened them into a re-delivery of his money. What a shame it was to see the cause of such fellows espoused by any man in that House! He did not suppose the Honourable Baronet shared in their gains, and he might laugh as he pleased, and spout like a lawyer, but it was a poor way to show himself off for the sake of a little notoriety among such despicable sectaries. He hoped the House would not lend any countenance to the imposture.

Sir THOMAS TURTON good humouredly replied, that the Jennerian Society, in whose interest the preceding speaker exhibited so much untempered zeal, was not instituted till 1803. The original Vaccine Pock Institution was established by Dr. Pearson in 1799. The Institution to which the petition referred was established in 1806, chiefly by members of the Society of Friends, a sect to whose virtuous principles and behaviour it was his privilege to bear testimony. Since 1806 the Institution had communicated the vaccine matter to 81,000 persons in every situation of life. The petitioners only desired to have the facts they adduced inquired into, and hoped for public aid only in the event of being entitled to it on public grounds.

This application for assistance by Walker's Institution

rendered its concession to the Jennerian Society impossible: it was not for the Government to get into hot water by showing favour to either; and as both could not be subsidised, it was determined to vary the application, and to ask the House of Commons to provide means for the maintenance of a new and independent institution from which "the Genuine Vaccine Virus could be distributed without expense throughout the British dominions." Mr. GEORGE ROSE, Treasurer to the Navy, took charge of the measure, which he introduced to the House on 9th June, 1808. After dealing with a notorious failure of Vaccination at Ringwood, he proceeded to observe, that whilst it could no longer be said that Vaccination was a certain security against Smallpox in all cases, yet the evidence showed that the failures were not one in 300. He would therefore move that the House having the testimony of the Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin, that Vaccination was salutary and generally effective, it is desirable that a Central Institution be formed for the provision and distribution of Real Vaccine Matter, and that its administration be committed to the Royal Colleges of Physicians and Surgeons in London. The expense would not be more than £2500 or £3000 per annum.

Mr. DAVIES GIDDY said he should not oppose the resolution, but it would have been much better to have refrained from interference. The people would neglect inoculation, and then smallpox would break out with tenfold severity.

Mr. FULLER observed that Smallpox had been annihilated in Calcutta by systematic and enforced Vaccination, and he believed the same result was attainable in this country. He thought that even those who hesitated to resort to general compulsion, would not object to the Vaccination of all children in workhouses.

Sir T. TURTON would have preferred a committee of investigation. There were already three Institutions in London for the express purpose of propagating cowpox,

and the object Mr. Rose had in view was more likely to be attained by private subscriptions and by assistance from Government than by a special Institution formed and endowed by the State.

Lord HENRY PETTY contended that as the evidence was now confessedly incomplete as to the infallible efficacy of Vaccination, it was highly proper that investigation should be persevered in under the eye of the public instead of by a number of small institutions which were not perhaps altogether exempt from the imputation of being guided by mercenary motives.

Sir FRANCIS BURDETT said Vaccination appeared before them with a complexion widely differing from that originally assumed. A short time ago they were assured it was an infallible preventive of Smallpox, and that its practice was so simple that any old woman was equal to it. Now they were told that it was a very nice operation requiring great judgment and skill, the want of which was held to account for the many failures which had occurred. Thus there was neither that simplicity nor security which was originally asserted. Considering these manifest discrepancies between promise and practice, it was, he thought, most unwise for the House to intervene in order to help what appeared to be a failing experiment. They ought to be cautious—they ought not to prop up what might prove to be pernicious error. Government in this free country cannot compel people to submit to the prescriptions of physicians, or the operations of surgeons, or anything except the laws; and it was doubtful whether science itself would be benefitted if placed under Government direction. They were referred to the reports of the Medical Colleges, but as he read these reports he detected much hesitation and evasion, and anything but the assurance displayed on behalf of Vaccination by several members of the House. Many instances of failure were admitted, and such instances might safely be doubled. As for Spurious Cowpox he wished to know what it was. It was used to account for all mishaps, and it was, he suspected, a mere shift, shuffle, and get-off.

[Sir Francis need not have spoken thus dubiously, for the Report of the Physicians admitted what he suspected.] He would much prefer a committee of investigation, and hoped the resolution would not be pressed.

Mr. WILBERFORCE brought up the foreign argument. There might be failures at home, but these could be satisfactorily accounted for. It was for them to consider the magnificent successes of Vaccination in other lands [*Omne ignotum pro magnifico est*], concerning which there was no room for doubt. He saw no surer method of inspiring the public with confidence in Vaccination than by the establishment of the proposed Institution.

Mr. ROSE explained that he merely wished to bring the House to a resolution, leaving it to his Majesty [that was to say, himself for the Government] to give it effect.

Mr. GEORGE CANNING, Secretary of State for Foreign Affairs, declared that though he considered the discovery of Vaccination to be of the greatest importance, yet he could not imagine any circumstances whatever that would induce him to follow up the most favourable report of its infallibility with any measure for its compulsory infliction.

This declaration of Canning is well worth attention and commemoration. It serves to mark the reverence for personal liberty, which was the fine distinction of the former order of English statesmen, and separated, when little else did, the English from the Continental Tory. The noble tradition of this liberty meets with scant favour in these times, and Canning's avowal in the new House of Commons would be heard as an anachronism. Nearly every adventurer who has a prescription for the moral and physical welfare of his fellow creatures hopes to have it enforced by legislation; and since, under penalty of fine and imprisonment, our babes are cut and poisoned to save them from smallpox, there is no infraction of personal liberty, however outrageous, that can now be pronounced impossible.

When the House divided there were 60 for the motion and 5 against it—again a small House for so critical a matter.

With the permission to spend £3000 a year, the National Vaccine Establishment was constituted, Jenner being consulted in its organisation. A Board was formed, consisting of the President and four Censors of the Royal College of Physicians, and the Master and two senior Wardens of the College of Surgeons. The Board met on 8th December, 1808, and proceeded to business. Jenner, as was his fatality on important occasions, was absent, being detained at Berkeley by family affliction. He wrote to Moore—

> I should be unworthy of the name of father were I to stir from my children. Indeed, nothing would make me, not even a royal mandate, unless accompanied by a troop of horse.

Jenner was elected Director, but not a member of the Board, and immediately began to protest that he was disregarded and subjected to indignity. "The Board," he said, "appointed me Director, but they soon contrived to let me feel that I was to be a Director *directed*." The arrangement he had made with Mr. Rose and Sir Lucas Pepys, the President of the College of Physicians, was, he held, altogether different—

> It was stipulated between Mr. Rose, Sir Lucas, and myself, that no person should take any part in the Vaccinating Department who was not either nominated by me or submitted to my approbation. On my reminding Sir Lucas of this, he replied, "You, Sir, are to be whole and sole Director. We [meaning the Board] are to be considered as nothing. What do *we* know of Vaccination." *

Sir Lucas of course was jeering, but Jenner's head was so turned with vanity and flattery that he could not distinguish mockery from sincerity. He had constructed for himself a fool's paradise, out of which the Board pitched him unceremoniously. He recommended his bludgeon bearer, John Ring, for Chief Vaccinator and Inspector of Stations, but the Board declined to have anything to do with him, and added insult to contempt; for in Jenner's words, written in the third person—

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* Letter to JAMES MOORE, 16*th January*, 1809.

They appointed a gentleman in his place who was taken from an Institution which had been personally hostile to Dr. Jenner on all occasions.

Subsequently he sent in a list of seven names for Sub-Vaccinators, of which the Board rejected five, which brought matters to a crisis, and he resigned. In the memorandum, from which I have quoted, he wrote—

By the whole of these circumstances, Dr. Jenner felt himself under the necessity of withdrawing from the establishment. He could take upon himself no responsibility where he had no power, not even a vote. He did not wish to control the establishment; nothing was further from his thoughts. But he expected that the practical part of its concerns would have been under his direction, as the title of his office implied; and he expected that those gentlemen whom, from a consciousness of their pre-eminent ability, he had so strongly recommended to conduct this practical part, would have been appointed. But as his recommendations have been disregarded—as arrangements and appointments have been made which are contrary to his judgment, and as he is informed by the Board that it was intended for them to use their own discretion, and that they alone are responsible for the conduct of the establishment, Dr. Jenner declined accepting the station of Director, to which they had nominated him, since he found that he was to have nothing to do in the establishment, and that his office was only a name.*

To those who did not know Jenner, or who accepted him at his own estimate, the treatment to which he was subjected might appear reprehensible; but the Board understood their man, and only cared to have the benefit of his name, for little else was worth having. What could be made of a character indolent and untrustworthy; who disliked London and was off to Gloucestershire on any pretext; whose sickly family had from him the supreme consideration of an affectionate mother! He wrote to Moore—

I agree with you that my not being a member of the British Vaccine Establishment will astonish the world; and no one in it can be more astonished than myself.

He was mistaken. The world, so far as it thought at all, considered he was handsomely rewarded with his

* Baron's *Life of Jenner*, vol. ii. p. 124.

£30,000, and with so much public money in his pocket might have looked for a better disposition on his part. When his nominations were disregarded, he declined even to come to London, and thus excused his sulking at Berkeley—

I was quite in earnest at the time I informed you of my intention to come to town, but while I was getting things in order there came a piece of information from a Right Hon. Gentleman which determined me to remain in my retirement. It was as follows—

That the Institution was formed for the purpose of a full and satisfactory investigation of the benefits or dangers of the Vaccine Practice, and that this was the reason why Dr. Jenner could not be admitted as one of the conductors of it, as the public would not have the same confidence in their proceedings as if the Board were left to their own judgment in doubtful cases.

This is the sum and substance of the communication—

What do we know of Vaccination?

We know nothing of Vaccination!

Alas! poor Vaccinia, how art thou degraded!

You intimated something of this sort to me some time since, and now I get it from the fountain head. An institution founded on the principle of inquiry seven or eight years ago, would have been worthy of the British nation; but now, after the whole world bears testimony to the safety and efficacy of the Vaccine Practice, I do think it a most extraordinary proceeding. It is one that must necessarily degrade me, and cannot exalt the framers of it in the eyes of common-sense. I shall now stick closely to *my own Institution*, which I have the pride and vanity to think is paramount to all others, as its extent and benefits are boundless. Of this I am the real and not the nominal Director. I have conducted the whole concern for no inconsiderable number of years, single-handed, and have spread Vaccination round the globe. This convinces me that simplicity in this, as in all effective machinery, is best.*

In the discussion in the House of Commons it was stated by his friend, Lord Henry Petty, that one of the objects of the Establishment would be investigation, and it was absurd for Jenner to pretend that the fact came upon him as a revelation; and, unless completely blinded by conceit, he must have recognised that the general faith in Vaccination exhibited in 1801 had been much

* Letter to JAMES MOORE, *4th April*, 1809. Baron's *Life of Jenner*, vol. ii. p. 126.

shaken by the experience of the succeeding seven years. But it is idle to argue the matter. When Jenner could say that he single-handed had conducted the whole concern for years and spread Vaccination round the globe, he could assert anything. The letter is interesting chiefly as an exhibition of character.

We shall return to the National Vaccine Establishment and its management—a curious story. Suffice it for the present to observe, that its immediate effects were adverse to Vaccination. The annual endowment was consumed in salaries, and many ceased to subscribe to the Cowpox Societies since Vaccination was so well provided for. The essential mischief consisted in the recognition of the evil practice by the State, whereby it has been perpetuated to the common injury to our own day.

THE ORIGINAL VACCINE POCK INSTITUTION.

The national endowment of Vaccination afforded a convenient pretext for closing this Institution, founded by Dr. Pearson and his friends in 1799; but some said the true reason was involved in the following resolutions—

VACCINE POCK INSTITUTION,
Broad Street, Golden Square.

GENERAL QUARTERLY COURT, Nov. 5, 1805.

Resolved—That according to the experience of the medical establishment of this Institution, it appears that the Inoculation for the Cowpock affords security against the Smallpox equally with Variolous Inoculation, and that the new practice possesses all the advantages already stated to the public.

Resolved—That, in order to give a further proof to the public, and to afford an inducement for information adverse to the new practice, the following proposal be made public, viz.:—That, in future, every patient who shall be vaccinated at this Institution, on discharge, shall receive a Certificate, stating that such patient has gone through the Cowpock, and engaging that if hereafter the said patient shall take the Smallpox, he or she shall be entitled to the sum of Five Guineas, to be paid from the funds of this Institution at the first General Court, after the proofs have been given, according to the rules of the medical establishment.

WILLIAM SANCHO, *Secretary*.

The offer attested the sincerity of the conductors of the Institution, but so many patients, it is said, laid claim

to Five Guineas that it was not without satisfaction that a reasonable cause was afforded for shutting up.

Dr. Pearson held that it was impossible to be re-vaccinated. He argued that since no one could have Smallpox twice, no one could have the equivalent of Smallpox, namely Cowpox, twice. It was a logical contention; but facts did not correspond to the logic. Pearson also objected to the Variolous Test, or inoculation with Smallpox after inoculation with Cowpox to prove that the constitution was fortified against attack. He preferred Cowpox to Smallpox for the purpose, as milder and less liable to dangerous results. He found that after Cowpox it was impossible to have Cowpox—at least immediately. Hence he was confirmed in his opinion that Cowpox after Cowpox was impossible; just as others argued on the same grounds that Smallpox after Cowpox was impossible. Yet at this day none doubt that Pearson was in error; for all believe in the possibility of re-Vaccination, or Cowpox after Cowpox; likewise of Smallpox after Cowpox.

CHAPTER XVIII.

HORSEGREASE AS A SOURCE OF VACCINE.

In order to complete the account of Jenner's awards and the adoption of Vaccination by Parliament, I have passed over several matters of interest and significance, which I shall now proceed to deal with, commencing with the tactics of our hero in relation to Horsegrease.

In his *Inquiry*, published in 1798, Jenner set forth Horsegrease as the origin of that form of Cowpox, which, when inoculated on the human subject, ensured life-long security from Smallpox. Many attempts were consequently made to produce pox on the teats of cows by inoculating them with Horsegrease, but in vain; and the possibility became discredited. Moreover, the notion of

inoculation with Horsegrease, either immediately or through the cow, was disliked intensely. It was pronounced repulsive. Why virus from horses' heels should be more repulsive than virus from cows' teats was not explained; but, as we know, there is no accounting for tastes. Many who eat beef with relish would start with disgust from horse-flesh. A story is told of a Wesleyan who rebuked a sister for wearing feathers in her hat, and was sharply referred to the existence of flowers in her own. "Yes, sister dear," was the cogent reply, "but we must draw the line somewhere, and it is drawn at feathers." The line was drawn at Horsegrease, and the origin of Cowpox as asserted by Jenner and his country acquaintance was conveniently denied. Jenner was not slow to perceive how the wind of opinion was blowing, and let Horsegrease drop. He said not a word about it in his petition to Parliament in 1802, nor did he again advance it as a reason for consideration.

Now, why was this? Was it because he had ceased to believe that Cowpox originated in Horsegrease? Not at all! Why, then, did he not vindicate his opinion and confront vulgar prejudice? Simply because he had the wit to discern, that whilst he might get something out of the national purse for the Cowpox recipe, he could get nothing for the Horsegrease one. As Dr. Pearson observed, "The very name of Horsegrease was like to have wrecked the whole concern"—an observation that Dr. Mason Good confirms in saying, "The mere idea of using the matter of grease from the horse's heel excited from the first so deep and extensive a disgust that Cowpox Inoculation had nearly fallen a sacrifice from the supposed union of the two diseases."

It is not to be supposed that I am censuring Jenner as a tradesman.* If any of us had two patents for sale,

* As tradesman, however, Jenner was not honest. He took to market what was not his to sell. The introduction of Cowpox for inoculation (stigmatised in *The Inquiry* as spurious, not being derived from Horsegrease) was effected by Pearson, and Jenner's claim to it was an act of piracy.

we should be great fools if we declined to take £30,000 for one without the other, or suffered one to prejudice the other, or tried to inflict any doctrine about them upon the purchaser. It is for those who go to market to adapt themselves to the market, and remember that sellers were made for buyers, and not buyers for sellers. Since then the public were ready to pay for Cowpox, whilst they shuddered at Horsegrease, it was not for Jenner to force Horsegrease upon them.

Such is mercantile logic; and on its own conditions it is irrefragable; but it is not the custom to deal with Jenner as a tradesman, but as a man of science, and to range him with great discoverers, inventors, and benefactors of mankind; and here it is that I decidedly demur. What, I ask, did he discover? He did not discover that Cowpox prevented Smallpox: that was the dairy-maids' faith. He did not discover that Horsegrease prevented Smallpox: that was the farriers' faith. He did not discover that Horsegrease on milkers' hands begot pox on cows' teats: that was the farmers' belief. He did not discover that inoculated virus could be conveyed from arm to arm: that was an existing practice. What then did he discover? He discovered nothing. He did no more than take the vulgar opinion of his neighbourhood to the London market. He made a few perfunctory experiments by way of confirmation, advertised them in a book, and by good or ill luck the notion was caught up, and worked to practical issues, chiefly by Pearson, who thereby incurred the full malignity of Jenner's jealousy.

The distinction between a man of science and a tradesman is this, that the mind of the one is set on the extraction of truth and the other on the extraction of profit. The man of science does not inquire what the public may be pleased to know and pay for, but he ascertains and defines what is fact, and leaves the public to adjust themselves thereto as they may find convenient. If they recognise the truth communicated, it is well for them; if they dislike or deny the truth, it is ill for them;

but well or ill, the man of science is the disinterested expositor of what he knows to be true; not unfrequently, when his revelation vitally affronts popular prejudice, realising the blessing of those who are persecuted for righteousness' sake.

What therefore I maintain concerning Jenner is, that the truth (as we may presume he regarded it) he did not fully reveal; that what he did reveal, he suffered to be derided and denied; that he was content to take credit for so much of it as was marketable; whilst his private conviction about Horsegrease remained unaffected, not only in theory, but in deliberate practice.

It is for me to establish these assertions.

First, I say, he did not fully reveal what he knew. In 1789 Jenner inoculated his son, Edward, an infant of 18 months, not with Cowpox, or with Horsegrease, but with Swinepox; and, according to the evidence of his own papers, the result was perfectly satisfactory. The child was subsequently inoculated with Smallpox on five or six different occasions, and always without effect. According to the well-known variolous test, he was proof against Smallpox. In short, there was nothing that Jenner ever adduced in favour of Cowpox that was not equally valid of Swinepox. And this Swinepox experiment was made nearly ten years prior to his advertisement of Cowpox and Horsegrease. Why, I ask, did he keep back the truth about Swinepox? When Cowpox was scarce, and every cow-house was explored for virus, why did he not recommend Swinepox as an alternative? Why, too, did he refrain from the obvious generalisation, that Cowpox, Horsegrease, Swinepox, and probably other sorts of pox, generated fevers, during the prevalence of which inoculation with Smallpox was not apt to take? The answer is plain, Because he had something to sell rather than something to teach.

In conformity with this conduct he suffered the origin of Cowpox in Horsegrease, and the specific virtue of grease to be derided and denied. "It was fortunate for Dr. Jenner, and the triumph of his discovery," wrote Dr.

Mason Good, "that a minuter attention to the subject gave sufficient proof that there was no foundation for his opinion that Cowpox originated in Horsegrease, nor that any connection existed between the diseases." * Such was the convenient medical verdict, which Jenner did not venture to disturb, though all the while persuaded of its error. There were failures to inoculate cows with Horsegrease, but Thomas Tanner, veterinary surgeon, of Rockhampton, Gloucestershire, "had the merit," says Dr. Baron, "of proving the truth of Jenner's statement." † He succeeded in communicating the disease to the cow from the heel of the horse, producing on the cow's teat a complete vaccine pustule. "From handling the cow's teats," said Tanner, "I became myself infected and had two pustules on my hand, which brought on inflammation, and made me unwell for several days. The matter from the cow, and from my own hand, proved efficacious in infecting both human subjects and cattle."‡ Jenner distributed the virus from Tanner, and it operated precisely like Cowpox. But the proof did not rest with Tanner: others repeated his experiment with similar issues. Dr. Loy of Whitby published in 1801 *Some Observations on the Origin of the Cowpox*, in which he confirmed Jenner's country tales, and described how (dispensing with the cow) he managed to inoculate patients with Horsegrease, producing pustules identical with those from Cowpox, and subjecting the persons thus equinated to the variolous test with complete impunity. Yet, with so much to fortify him, Jenner kept silent. He preferred to be adjudged mistaken rather than risk the forfeit of public favour and pay. Nor might I blame him, had he frankly reasserted the integrity of the Gloucestershire faith, and allowed that since the public were ready to accept Cowpox without Horsegrease, it was not for him to stand in the way of

* *Study of Medicine*, vol. iii. p. 59.
† *Life of Jenner*, vol. i. p. 248.
‡ *Treatise on the Cowpox.* By John Ring. P. 336.

their preference by an obstinate defence of what was non-essential in practice.

But the case for Horsegrease was yet stronger than I have stated. Dr. Sacco of Milan was sometimes described as "the prince of vaccinators" by reason of his enthusiasm, his professional attainments, and the facilities that were accorded to him in the Cisalpine Republic of those days for universal vaccination. He tried to generate pox on the cow with grease from the horse, but failed, and in 1801 reported to Jenner his failure. In 1803, however, he cried, Eureka! A coachman presented himself at the Milan Hospital suffering from an eruption contracted in grooming a horse with greasy heels. He was at once led off by Sacco to the Foundling Asylum, where nine children were inoculated from the vesicles on his hands. On three of the children the inoculation took, producing vesicles which were pronounced to be the same as those resulting from Cowpox. The virus was propagated from arm to arm, and distributed in all directions. Dr. Sacco from thenceforth avowed himself a Horsegreaser. "It is now admitted and settled," he wrote to Jenner from Milan, 25th March, 1803, "that grease is the cause of vaccine, and we cannot too soon alter the designation to equine."

Was the designation changed to equine? It was not, nor was the attempt made. Those chiefly concerned in promoting vaccination in England would not hear of Horsegrease, and many were ready to swear that in the matter of pox, the horse and the cow had no connection whatever, and that Jenner had too hastily assumed the truth of a vulgar west country opinion.

Dr. De Carro of Vienna, who described himself as Jenner's friend and first apostle, having effected the first vaccination on the Continent and transmitted the first charge of vaccine to India, was also a Horsegreaser. Whilst Jenner was judiciously holding his tongue about Horsegrease in England, he wrote to De Carro congratulating him on his success in conveying Cowpox to the East, and ascribing the failure of the English

attempts to the absurd prejudice against Horsegrease, which Dr. Loy had, however, completely annihilated. Here are his words under date, 28th March, 1803—

> I am confident that had not the opponents of my ideas of the origin of the disease been so absurdly clamorous, particularly the *par nobile fratrum* [Pearson and Woodville], the Asiatics would long since have enjoyed the blessings of Vaccination, and many a victim been rescued from an untimely grave. The decisive experiments of Dr. Loy have silenced the tongues of these gentlemen for ever.*

How the clamorous opposition to Horsegrease had deprived Hindoos of the earlier blessing of vaccination, we are left to conjecture. Perhaps he meant that Horsegrease would have borne transit to India better than Cowpox, or that the Hindoos themselves might have resorted to horses with greasy heels.

In reply, 22nd April, 1803, De Carro wrote to Jenner commending his moderation in maintaining silence toward his antagonists—little apprehending the motives of that silence. Pearson's conduct, he thought, bordered on insanity. "I am extremely glad," he continued, "that you have treated it with the contempt it deserves, though I am happy to see that your friends have exposed his ridiculous and malevolent designs."

De Carro was intimate with Sacco of Milan, and from him received virus derived from Horsegrease, which he used indiscriminately with Cowpox, until in Vienna it was unknown who were vaccinated and who equinated.†

De Carro was also in correspondence with Dr. La Font, a French physician, established at Salonica, who was likewise a Horsegreaser. He discovered that the Macedonian farriers recognised three sorts of grease in horses, called in general *javart*, and discriminated as *l'écrouelleux, le phlegmoneux, et la variolique.*‡ With the variolous grease, La Font inoculated two boys, and from them other children, reproducing the experience of

* Baron's *Life of Jenner*, vol. i. p. 428.
† Copeland's *Medical Dictionary.*—Art. Vaccination.
‡ *Histoire de la Vaccination.* Par Jean de Carro. Vienne, 1804.

Loy of Whitby and Sacco of Milan. De Carro in communicating La Font's success to Jenner, 21st June, 1803, observed, "These particulars, I hope, will silence all those who still doubt the truth of your doctrine as to the connection of Grease, Cowpox, and Smallpox"—Jenner holding that Smallpox was a malignant variety of Cowpox, whilst Cowpox came out of Horsegrease.

Notwithstanding these confirmations and his boast that the opposition of Pearson and Woodville was silenced for ever, Jenner suffered judgment to go against him. He recognised that it was expedient that the connection between Horsegrease and Cowpox should be denied. He had his bill to settle with the English public, and it was not for him to make difficulties. A curious evidence of how thoroughly the unpopular truth was suppressed is furnished by Dr. Willan's treatise *On Vaccine Inoculation*, published in 1806. There is not a word or hint in it concerning Horsegrease. The treatise was the work of a competent physician, who set forth what was known of vaccination (from the standpoint of belief) with fulness and clearness, accompanied with an appendix of letters and reports from Jenner himself, from Pearson and other experts in the new practice—but as to Horsegrease, the silence was absolute. How the disagreeable truth was so effectually covered up is more than I can account for. It was not mentioned in the debates in Parliament, nor was it referred to in the reports of the Colleges of Physicians and Surgeons, nor did the opponents of vaccination use it with the force that might have been expected. One explanation is, that Jenner's *Inquiry* never entered into general circulation, that no popular edition ever appeared, and that it was chiefly known at second hand. The leading representatives of vaccination, moreover, so boldly disowned Horsegrease and Jenner's authority in ascribing Cowpox to its parentage, that there was little use in charging them with it; whilst all the while Jenner offered no open resistance to those who contemned him for one mistake, but exhausted the language of adulation on his imputed merit.

Thus we suppose it came to pass that at the end of twenty years Dr. Mason Good, as the exponent of orthodox medical faith, felt justified in asserting that there was no foundation for the opinion that Cowpox originated in Horsegrease, nor that any connection existed between the diseases, and that it was fortunate for Jenner and the triumph of his discovery that the fact was so.

Jenner was silenced, but was he convinced? How could he be convinced? Horsegrease as the origin of Cowpox might be voted detestable and impossible, but there was the evidence of the country folk, confirmed by Tanner, Loy, Sacco, De Carro, and La Font; and though a weak man may be put down, or think it worth while to be accounted mistaken, yet, in the stillness of his mind, he knows that facts are facts whatever may be said to the contrary. When, therefore, Jenner had filled his purse, obtaining all he could expect from public favour, and was clear of London, and the oppression of its savants, he reverted to his first opinion as true—true and untrue, true with a distinction, which I shall presently define. Writing to James Moore, Director of the National Vaccine Establishment, from Berkeley, on 23rd July, 1813, he observed—

> You seem not perfectly satisfied that the origin of vaccine is clearly made out. For my part, I should think that Loy's experiments were sufficient to establish it, to say nothing of Sacco's and others on the Continent. However, I have now fresh evidence, partly foreign and partly domestic. The latter comes from Mr. Melon, a surgeon of repute at Lichfield. He has sent me some of his equine virus, which I have been using from arm-to-arm for two months past, without observing the smallest deviation in the progress and appearance of the pustules from those produced by the vaccine.*

And in a subsequent note of 1st August, he repeated—

> Dear Moore,—I have been constantly equinating for some months, and perceive not the smallest difference between the pustules thus produced and the vaccine. Both are alike, because they come from the same source.†

* Baron's *Life of Jenner*, vol. ii. p. 388. † *Ib.* p. 388.

To Moore again he wrote from Cheltenham, 27th October, 1813—

I am sorry you have not succeeded in infecting a cow. I have told you before *that the matter which flows from the fissures in the horse's heels will do nothing.* [Note the observation placed in italics.] The virus is contained in vesicles on the edges and the surrounding skin.

Did I ever inform you of the curious result of vaccinating carters? From their youth these men have the care of horses used for ploughing our corn lands; and great numbers have come to me from the hills to be vaccinated, but the half have proved insusceptible. On inquiry, many of them have recollected having sores on their hands and fingers from dressing horses affected with sore heels, and being so ill as to be disabled from work; and on several of their hands, I have found the cicatrix as perfect and characteristically marked as if it had arisen from my own vaccination.*

Then we have a memorandum of Jenner's, dated 1st April, 1817, wherein he thus traces the course of the virus—

Rise and progress of the equine matter from the farm of Allen at Wansell. From a horse to Allen; from Allen to two or three of his milch cows; from the cows to James Cole, a young man who milked at the farm; from James Cole to John Powell by inoculation from a vesicle on the hand of Cole; and to Anne Powell, an infant; from Powell to Samuel Rudder; from Rudder to Sophia Orpin, and to Henry Martin; from H. Martin to Elizabeth Martin. All this went on with perfect regularity for eight months, when the virus became intermixed with other matter, so that no journal was kept afterwards. Proof was obtained of the patients being duly protected†—

Which was to say, that they were subsequently inoculated with Smallpox without effect. Among Jenner's papers, there were other entries to the same purpose, thus—

17*th May*, 1817.—Took matter from Jane King (equine direct) for the National Vaccine Establishment. The pustules beautifully correct.‡

This equine virus from Jane King was extensively diffused. It was, we see, sent to London; it was also sent to Edinburgh; § and Dr. Baron says he had supplies

* Baron's *Life of Jenner*, vol. ii. p. 390.
† *Ib.* p. 226. ‡ *Ib.* p. 226.
§ *Account of Varioloid Epidemic in Edinburgh.* By John Thomson. London, 1830.

of it for use in the Gloucester Infirmary. Baron relates that in the following year he was able to return the gift, having obtained virus from the hands of a boy infected directly from the horse. Here is Jenner's acknowledgment of the present, dated 25th April, 1818—

> My Dear Baron,—Yesterday H. Shrapnell brought me the equine virus and your drawing, which conveys so good an idea of the disease, that no one who has seen it can doubt that the vesicles contain the true and genuine life-preserving fluid. I have inserted some of it into a child's arm; but I shall be vexed if some of your young men at the Infirmary have not done the same with the fluid fresh from the boy's hand.*

It is surely unnecessary to adduce further evidence of what was Jenner's mature faith and deliberate practice. Further, it is manifest that to the end of his career he held that pox in the cow was not only derived from grease in the horse, but that it was exclusively derived from the horse, and, that apart from the horse, Cowpox would cease to exist. Owing to the multiplication of vaccination failures, it began to be conjectured that vaccine might be worn out by transmission from arm-to-arm, and that a reversion to the cow might be expedient; and discussing the question in a letter to Moore, dated 5th March, 1816, Jenner advanced the objection—

> If there were a real necessity for a renovation, I know not what we should do; for the precautions of the farmers with respect to their horses have driven the Cowpox from their herds.†

Why did not Moore rejoin, Where is the difficulty? Suppose pox driven from the herds, what conceivable reason was there for anxiety when the cow had become a demonstrated superfluity?—when, in Jenner's own words, "the true and genuine life-preserving fluid" might be drawn direct from horses' heels? Except for the perpetuation of imposture, the cow in the case had ceased to have any value whatever. But, as so often happens with quacks, their minds become so saturated

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* Baron's *Life of Jenner*, vol. ii. p. 227. † *Ib.*, p. 399.

with their own humbug that there is nothing left of common-sense.

Having thus proved my assertions concerning Jenner, it may be reasonably asked, How was it that some got Cowpox by means of Horsegrease when others could not? for, it may be argued, that if Cowpox issued straight and invariably from inoculated Horsegrease, not even the most resolute prejudice against Horsegrease could have permanently kept back the truth.

The answer is, that Cowpox never came out of what is commonly known as Horsegrease. The statement made by Jenner in his *Inquiry* of 1798 that—

> The limpid fluid which issues from the small cracks or fissures in the inflamed and swollen horse's heel—

infected cows and begot pox was a blunder, which he explicitly reversed fifteen years afterwards in his letter to Moore of 27th October, 1813, already cited—

> I am sorry [he wrote] you have not succeeded in infecting a cow. I have told you before that the matter which flows from the fissures in the horse's heel will do nothing. It is contained in vesicles and the surrounding skin.*

Jenner, we have always to remember, was a slovenly investigator, not apt to take pains, but apt to eke out observation with invention. His friend, "honest Jack Baron of Gloucester," who himself inoculated with horse virus unmodified by the cow, actually wrote Jenner's life in two volumes, and not until the work was ready for the binder did he discover that he was in error in common with his master in ascribing Cowpox to Horsegrease! Such was the intellectual muddle in which these prophets of vaccination operated! In a note stuck at the end of the second volume, we have the following amazing confession, made, remember, in 1838, fifteen years after the chief conjurer's death—

> I take this opportunity of expressing my regret that I have employed the word *Grease* in alluding to the disease in the horse. *Variolæ Equinæ* is the proper designation. It has no necessary

* Baron's *Life of Jenner*, vol. ii. p. 390.

connection with the *Grease*, though the disorders frequently co-exist. This circumstance at first misled Dr. Jenner, and it has caused much misapprehension and confusion.*

Here we have the secret and desired explanation. It was out of Horsepox, and not out of Horsegrease, that Cowpox was derived, and in confounding grease with pox, Jenner mystified himself and others, and obscured the whole doctrine of vaccination. The Macedonian farriers who in 1803 informed La Font that they recognised three sorts of grease, and one of them variolous, were more accurate observers than the Gloucestershire farriers and farmers whose opinion Jenner lazily retailed. Whether he had any clear apprehension of his own blunder is not apparent. We have seen how long it took his biographer, Baron, to find it out. This is certain, that he made no public attempt to set right what he had so egregiously set wrong, nor to withdraw the statement in his *Inquiry* that Horsegrease only acquired its efficacy against Smallpox after inoculation on the cow.

Lastly, we may inquire what is the present state of opinion as to Horsegrease and Cowpox? When difficult questions are asked, we usually turn to our cyclopædias, and taking down Hooper's *Lexicon Medicum*, 8th ed. 1848, Art. Cowpox, we read—

> It is now ascertained that the horse and the cow each furnish, independently of the other, a virus capable of communicating genuine Cowpox to the human subject.

Genuine Cowpox communicated by a horse is surely a bull of the first magnitude! The *Encyclopædia Britannica*, 8th ed. 1860, Art. Vaccination, illuminates us thus—

> It is now to be regarded as an established fact, that Horsegrease and Cowpox are the same complaint, modified by the constitution of the animals in which they occur.

An established fact, indeed!—established in quicksand! Some say the Gloucestershire farmers and Jenner were correct in attributing Cowpox to Horsegrease, and

* Baron's *Life of Jenner*, vol. ii. p. 456.

that they can only be charged with mistake in nomenclature. When they said Horsegrease, they meant Horsepox, not discriminating between maladies that sometimes occurred together. No one now believes that the affection recognised by veterinarians as "grease" ever originated Cowpox. The same rural authorities, including Jenner, held that where there was no Horsepox, there could be no Cowpox; but, so far as I can make out, that conclusion is surrendered. Pox on the horse may generate pox on the cow, but the cow may have pox without the horse.

> In this respect only was Jenner in error [says Mr. George Fleming, Army Veterinary Inspector]. The two diseases are perfectly independent of each other. Cowpox appears where there are no horses, or possible contact with horses; and may affect a number of cows in a dairy while the horses are entirely free from Horsepox.*

At this point comes the tug of war. If cows have pox, how do they contract the malady? Speaking at the London Conference on Animal Vaccination in December, 1879, Professor J. B. Simonds, Principal of the Royal Veterinary College, said—

> My contention is, that the existence of Cowpox has to be proved. Jenner's account of the disease was an illusion. In my experience among animals for forty years, I have never seen a case of Cowpox, and I do not believe that any form of variola belongs to the bovine race. Sheep are afflicted with pox, but not cattle. We hear of Cowpox, but who ever heard of Bullpox? And is it credible that a disease should be confined to cows and never attack bulls and steers? Let any one point out an affection of females that does not extend to the males of the same species.

Professor Simonds and others believe that Cowpox as described by Jenner was a parasitic affection of Smallpox, probably communicated by milkers; and that Ceely, Badcock, and others did intentionally, what milkers had done inadvertently, when they inoculated cattle with Smallpox in order to create virus for vaccination. On the other hand, those who assert the

* *Lancet*, 29th May, 1880, p. 834.

independent existence of Cowpox, hold no terms with this heresy. As Dr. Cameron says, "We can no more make Smallpox into Cowpox than by stunting an oak-tree we can make it a gooseberry bush." Fortunately I have no call to pronounce judgment on the controversy. The more it rages, the better I like it, and if the combatants disposed of each other as did the Kilkenny cats, I might not be very sorry.

A last word as to Horsepox. There seems to be little doubt that when inoculated on man it gives rise to vesicles indistinguishable from those raised by Cowpox. In 1863 Professor Bouley of Alfort produced pox on a cow by inoculating it with pox from a horse, and children were successfully vaccinated with the virus. In the Transactions of the Clinical Society, Vol. X., Mr. John Langton, describes the case of a groom who came to St. Bartholomew's Hospital, 20th March, 1877, with an eruption caught from a horse exactly like that induced by vaccination; and there could be no question, says Mr. Langton, that the disease was the same as that described by Jenner as grease.

There is much virus in currency as vaccine that is equine, and many of us are equinated who suppose ourselves vaccinated; and it might be argued that we have been saved from Smallpox by reason of our equination. Why with all the notorious failures of vaccination, and of re-vaccination, some of the more audacious medical quacks do not recommend Horsepox as an infallible alternative, is not easy to understand. It would be a Napoleonic stroke; nor is it improbable that before vaccination is surrendered the attempt will be made. How easily it might be asserted that vaccination is a failure in so far as it has lost the original virtue of equination, that the remedy is to dismiss the cow and revert to the horse, from whose poxy heels, as the immortal Jenner observed, there issues "the true and genuine life-preserving fluid." The oracle might be worked thus—

"Let us hear no more of pure lymph from the calf, too often, alas! an illusion. Sure and certain salvation from

Smallpox can only be guaranteed to those inoculated with pure pox from the horse. Come then to the horse, the horse with pox! Come quickly! Come yourselves! Come with your wives! Come with your children! Come and be saved by Horsepox from the loathsome pestilence that decimates the human race and brings myriads to untimely graves!"

CHAPTER XIX.

JOHN BIRCH.

It is part of the Jennerian legend that the introduction of vaccination was resisted by prejudice, fury and fanaticism, and that the practice made its way by sheer force of its proven efficacy. The statement is widely at variance with facts. Vaccination was accepted with instant acclamation by the medical profession, the royal family, and the public as an infallible and harmless preventive of smallpox; and the subsequent course of experience was to disprove alike its harmlessness and infallibility. That in some cases vaccination was encountered with absurdity and violence lay in the nature of things, even as it was advocated with absurdity, violence and prevarication. It is always easy to raise a laugh by the exhibition of the extravagance of either side in a hot dispute, but to what purpose? It would have been no cause for surprise if some had been moved to scorn by the facile credulity with which Jenner's magical prescription was so rashly accepted, but the world to which he appealed had no scientific acquaintance with the laws of health, and it was in nowise marvellous that, convinced of the prophylaxy of inoculated smallpox, they should have been overcome by the plausibility of inoculated cowpox. Yet were not all overcome, nor were all who resisted the popular craze furious. There was John Birch, for example, surgeon to St. Thomas's Hospital,

who with calmness and cogency steadily protested against the introduction of "the new disease styled cowpox;" and we may read his letters and pamphlets and fail to note a fiery epithet or unkindly imputation. People who talk as if all who opposed Jenner were steeped in ignorance and perversity can know nothing of John Birch.

Although satisfied with variolous inoculation, he had no objection to vaccination in itself. He thought it fair that experiments with cowpox should be tried, and the verdict of experience submitted to; but he complained that experience was anticipated and success proclaimed ere it was possible for the truth to be known, whilst every objector was overwhelmed with abuse. As an illustration of the unwarrantable persuasion that prevailed in favour of the new practice before there was time to justify it, Birch mentions that at the anniversary dinner at Guy's Hospital in 1802, he was surprised to find the usual business set aside to secure signatures to Jenner's petition for a vote of money from Parliament, and that after dinner toasts, songs, and compliments in honour of Vaccinia were the order of the day. Booksellers, he relates, declined to publish anything against vaccination, and editors of newspapers and magazines would not suffer a word to appear to its disparagement. Even the Post Office carried the cowpox and correspondence of the Royal Jennerian Society gratis until the collapse of the concern in 1806. Those who resorted to doctors and hospitals for inoculation with smallpox got cowpox instead in spite of assertions to the contrary. Church vied with chapel in recommending the new practice. The Archbishop of Canterbury was called upon to issue a letter directing the clergy to recommend vaccination from the pulpit, but, with the wariness of office, sent his chaplain to Birch to hear the other side, and the chaplain retired with the judicious observation, "His Grace must not commit the Church." Many clergymen, however, not only preached vaccination, but practised it with restless assiduity. Erasmus Darwin was not without

hope that baptism and vaccination might be associated. He wrote to Jenner from Derby, 24th February, 1802—

As by the testimony of innumerable instances, the Vaccine Disease is so favourable to young children, in a little time it may occur that the christening and vaccination of children may always be performed on the same day.

The Vaccine Disease so favourable to young children! The assertion affords a vivid glimpse of the prevalent enchantment. "The idea of connecting religious services with vaccination," says Baron, "had occurred to several individuals in this country as well as on the Continent." *

I viewed with indignant scorn [wrote Birch], the ungenerous artifice adopted by the Jennerian Society of sticking up in every Station House, in the Vestries of fanatical Chapels, and in Sunday Schools, that false *Comparative View of the effects of Smallpox and Cowpox* representing to the gaping multitude a frightful picture of Inoculation with the supposed misery attendant on it; and exhibiting representations equally false and exaggerated of the blessings of Vaccination.

The women were not behind the clergy in diffusing vaccine salvation. They were Jenner's most devoted allies. He took pains to teach ladies to operate with "a light hand" so as not to draw blood, and boasted that one of his pupils had ten thousand patients to her credit, rescued from the terror and peril of smallpox!

As Birch observed, it was not a question of medicine or of surgery that he and others had to deal with, but an outburst of enthusiasm in which the methods and arguments of science were swept heedlessly away. Any testimony to the credit of vaccination was accepted with alacrity, whilst the facts to its discredit were denied or explained away. This recklessness of procedure was most painfully manifest in the conduct of the Committee of the House of Commons which sat on Jenner's first petition for money in 1802—

"The number of witnesses in support of the application [wrote Birch] was 40, but out of the forty 23 spoke from mere hearsay, and

* *Life of Jenner*, vol. i. p. 541.

not from knowledge acquired in practice; while the three who spoke against it were heard impatiently, though they corroborated their evidence with proofs.

Birch wished to know what cowpox was. Jenner had said it was derived from horsegrease, but "that origin is proved to be erroneous, and is now given up, even by his best friends. On all hands it is admitted," Birch continued, "that it is not a disease of the cow, but communicated to the cow by the milker. No cow that is allowed to suckle her own calf ever has the complaint." What, then, is the disease in the milker? asked Birch. Is it smallpox? Is it *lues venerea?* Is it itch? A man came to St. Thomas's Hospital from an adjacent dairy with a hand and arm covered with ulcerations. He said several of the milkers and the cows' teats were affected in the same way, and he was told they had got cowpox. Birch called one of his country pupils and asked him what was wrong with the man. "It is itch—rank itch," was his reply. A box of Jackson's ointment for the itch was given to him, and at the end of a week he reappeared at the Hospital cured. If cowpox be itch, argued Birch—

Then if a patient be inoculated with the disorder, though it may suspend the capacity for Smallpox for a season in the constitution, it will ultimately prove no security—

Which was to say, that it was not probable that smallpox and itch could occur together, and that a person inoculated with itch would pass through the variolous test successfully. In this connection we may recall the fact that Jenner found it impossible to vaccinate a regiment at Colchester, the men with their women and children all being afflicted with itch.

Still farther to complicate the mystery of cowpox, Jenner began to describe it as genuine and spurious, but which was the one and which was the other he left in bewildering uncertainty. Said Birch—

Though Dr. Jenner could not tell us what Cowpox was, he soon came forward to inform us that it was of two sorts—the one genuine and harmless, the other spurious and hurtful.

Spurious Cowpox is a term I do not admit of. I know of no

such thing as *spurious* Smallpox, *spurious* Measles, *spurious* Lues Venerea, *spurious* Scrofula.

Birch's objection to spurious cowpox was forcible, but what in the innocence of his heart he took for a blunder was proved out of Jenner's own mouth to be a deliberate dodge in 1807. Pressed by the Committee of the College of Physicians to explain what he meant by Spurious Cowpox, he had to own that he knew nothing of such a malady, and that he had only meant to describe irregular effects of cowpox on the arms of the vaccinated! In other words, when vaccination turned out badly, he had found it convenient to ascribe the disaster to spurious vaccine! The policy revealed in this shameless avowal was cynically justified by Dr. Maunsell, who, in a well known volume, wrote—

> The term *imperfect* or *Spurious* Vaccination is frequently to be met with in books, and has been the cause of no small degree of confusion in practice, although, at the same time, *it has frequently afforded the practitioner an excellent asylum against the storms now and then arising out of failures in the protective power of the vaccine disease.**

From out the muddle as to the origin of cowpox and its genuine and spurious varieties, Birch demanded, What had Jenner discovered? It is not that cowpox prevents smallpox; for that has been asserted by dairy-folk for generations, and has been disregarded by physicians because proved to be untrue. What then is it? Let him define his discovery that we may know how to respect it. Let him explain why it is forbidden to inoculate direct from the cow. Is genuine cowpox invisible and to be taken on trust? Or is the disease so virulent on its first communication that it has to be meliorated in the body of some victim ere it is fit for public use? Birch asked these questions as we continue to ask What is cowpox? Is it a disease of the cow? Or is it communicated to the cow by man or by horse?

* *A Practical Treatise on the Management and Diseases of Children.* By Richard T. Evanson, M.D., and Henry Maunsell, M.D., Professors in the Royal College of Surgeons, Ireland. Dublin, 1838.

However definite the answers, the contradictions are equally definite, and the authorities equally trustworthy.

Practical men answered for Jenner, as they presume to answer at this day, "Whatever may be the origin of cowpox, we know that vaccination is harmless, and that it prevents smallpox; and more we neither demand nor care to inquire." The credulity and conceit of such practical men is that stupidity against which, says Goethe, even the gods are powerless. It was practical men who "on the mere show of reason" accepted vaccination before it could be tested, and on most superficial evidence, said Birch—

> Recommended Dr. Jenner to the munificence of Parliament for a discovery in practice which was never to prove fatal; which was to excite no new humours or disorders in the constitution; which was to be, not only a perfect security against Smallpox, but would, if universally adopted, prevent its recurrence for ever.

The harmlessness of the practice was soon belied—

> It gave rise [wrote Birch] to new and painful disorders. It was sometimes followed by itchy eruptions; sometimes by singular ulcerations; and sometimes by glandular swellings of a nature wholly distinct from scrofula, or any other known glandular disease. Eruptions of the skin are most frequent, and may be heard of in every parish of London; and whether Vaccination shall be called the Cow Evil, or the Jennerian Evil, posterity will have to determine.

The non-fatality of the practice was also speedily confuted. The disorders it excited caused numerous deaths—from erysipelas especially. It was then said, as it continues to be said to this day, "Yes, but it was not vaccination, but erysipelas the patient died of"—a form of words that seems to satisfy many minds accounted rational. Birch mentioned three or four cases of death resulting from vaccination, and adds—

> These cases were as favourably palliated and ingeniously excused as they could be; but it is admitted *that each patient was punctured by a lancet infected with what is called Cowpox; each arm so punctured became inflamed and ulcerated, and each patient died.*

The Variolous Test, used so unscrupulously to win converts to vaccination, was proved by the Inocu-

lators to be untrustworthy. They had no difficulty in variolating the vaccinated. When it was discovered that vaccination was no guard against smallpox, many of the vaccinated resorted to inoculation with smallpox, and they "took" as readily as did their unvaccinated acquaintance. Five in one family, the Hignells of Cheltenham, vaccinated by Jenner were variolated by Mr. Freeman, and smallpox resulted in the ordinary course. Nothing indeed became plainer than that the vaunted Variolous Test was a mere conjuring trick, and the more judicious vaccinators ceased to refer to it.

The promise that the vaccinated would remain for ever secure from smallpox Birch had no difficulty with. Londoners vaccinated by the most approved operators caught smallpox, and died precisely as did the unvaccinated. "Every post," said Birch in 1804, "brings me accounts of the failures of vaccination." As the failures multiplied, so did the excuses. There was the prime excuse of genuine and spurious cowpox. If vaccination failed, it could only be through the inadvertent use of spurious vaccine. Jenner had taught that one puncture was all-sufficient for protection, but as one was not found effective, it was asserted that two or three were requisite for absolute safety. Many, it was alleged, had been imperfectly operated upon, and the practice of the women and clergy and other busybodies was thrown into discredit, although at the outset their services and testimonies had been blazoned abroad as indisputable; but Birch made this conclusive answer—

> It cannot be meant to class Mr. Wachsel, Apothecary to the Smallpox Hospital, or Mr. Ring, the Accoucheur, among ignorant and equivocal practitioners; and yet from the patients vaccinated by these two persons I could bring instance of more failures, more deaths, and more diseases than have occurred in the practice of any other two persons who have come within my knowledge.

Many, moreover, who had been vaccinated by Jenner fell victims to the disease, and he was so pestered with awkward questions, says Birch, "that to avoid the perplexing appeals that were made to him daily, and the

messages that were perpetually sent requiring him to visit untoward cases, he retired from London." Subsequently he had to forsake Cheltenham for the same reason. The convictions of quackery were too numerous for his endurance.

Having proved that vaccination did not prevent smallpox, whilst it was a frequent cause of illness and death, Birch held up to derision the fine promises wherewith its advocates had beguiled the people—

> Were an architect to undertake to build an edifice which should be firm in its foundation; all its rooms wind and water tight; and such as might be inhabited with perfect security; if, before the edifice were well finished, the foundations were discovered to be rotten; and if in less than seven years, several apartments had fallen in and killed those who occupied them, while in a great number of rooms, the wind or rain was continually beating in, could I be blamed for declaring that the architect had broken his contract, and that the edifice ought no longer to be inhabited? Certainly not. Why then am I to be told that I am acting perversely when I remonstrate against the practice of Cowpox? for such an edifice as I have described, so rotten in its foundations, so ill built, so ruinous, is Vaccination.

Those who take success as the test of truth may say that Birch was unsuccessful in his contention; but he was not unsuccessful. Vaccination in London was discredited, and the imposture abated, as the report of the College of Surgeons in 1807 attests. Where retained, it was not so much as a preventive as a mitigator of smallpox, its advocates being content to occupy the safe position that it made milder a disease the severity of which was unknown.

Birch died in 1815. His sister reprinted his papers against vaccination (from which have come my citations*), and erected a monument to his memory in St. Margaret's, Rood Lane, Fenchurch Street, the inscription on which is noteworthy.

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* *An Appeal to the Public on the Hazard and Peril of Vaccination, otherwise Cowpox, by the late* John Birch, Esq., *together with his Serious Reasons for uniformly objecting to Vaccination: and other Tracts by the same Author.* 3rd Edition. London, 1817.

SACRED
To the Memory of
JOHN BIRCH, *Esquire*,
Many years an eminent Surgeon of this Metropolis;
who died on the 3rd February, 1815,
Aged 69 Years,
and whose earthly remains lie deposited under the Pulpit and Desk.

In his professional Character,
As humane as he was skilful,
He permitted not the daily sight of wounds and sores,
Afflictions and wretchedness of every kind,
To blunt the edge of his natural feelings,
For the sufferings of his Fellow creatures:
But, contemning a too hasty reliance on vaunted Theories,
Sparing of the Knife—abhorring unnecessary Torture—
A foe to wanton, cruel, or dangerous experiment,
Averse from rash operation, and the destruction of parts,
Redeemable by patient and judicious care—
He erected for himself a high and distinguished reputation,
On the solid, and only secure Basis of
ENLIGHTENED EXPERIENCE:
Stimulated throughout Life by a wise and Christian-like
Ambition, to cure, *not* maim—preserve, *and not destroy.*

Mankind is indebted to him
For a more intimate acquaintance with the powers
Of MEDICAL ELECTRICITY;
By his own ingenious and improved application of which
He performed many remarkable and almost unhoped-for cures.
But the Practice of COW-POXING,
Which first became general in his Day,
Undaunted by the overwhelming influence of
Power and Prejudice, and the voice of Nations,
He uniformly, and until Death, perseveringly opposed;
Conscientiously believing it to be a Public Infatuation,
Fraught with peril of the most mischievous consequences to Mankind.
Whether right or wrong, Time will most surely determine:—
MAN'S MERE OPINIONS MUST EVER BE LIABLE TO ERROR;
BUT BY THE MOTIVES THAT SWAY HIS HEART
SHALL HE ALONE BE JUDGED.

To perpetuate the remembrance of Qualities so excellent,
PENELOPE BIRCH,
His affectionate and only surviving Sister,
Hath raised this Monument:
Not out of a worldly and vain-glorious
Pride of Affinity;
But in order to hand down an Example worthy of Imitation
To succeeding Ages.

Jenner recognised Birch as a dangerous antagonist, and behaved toward him with his usual meanness. Writing from Berkeley, 11th October, 1812, to Moore in London, where smallpox was prevalent, he observed—

> I have not heard lately whether the fury of the Smallpox is abated in town. I trust it is. Had I power to exercise vaccination as I liked, in one fortnight this dismal work of death should entirely cease. What a sad wicked fellow is that Birch! Moseley I hear nothing of now, but Birch is still employing his agents to spread the pestilence.*

Birch a sad wicked fellow employing agents to spread pestilence in London, whilst the good Jenner, capable of arresting the dismal work of death, sat impotent at Berkeley! Comment is superfluous. Quack, malicious and impudent, is written at large.

CHAPTER XX.

GOLDSON AND BROWN.

William Goldson, member of the London College of Surgeons, practising at Portsea, published a pamphlet in 1804† wherein he set forth a number of instances within his own experience of smallpox following vaccination by infection or inoculation. He did not turn against vaccination, but suggested that its prophylaxy might neither be so certain nor so enduring as at first asserted. Vaccination, he pointed out, had been carried into practice on a wave of enthusiasm, and it was not unreasonable to expect that on closer acquaintance some of the claims made for it should be subject to modification. Indeed so much was already admitted; for failures had led to the discrimination of spurious from genuine cowpox,

* Baron's *Life of Jenner*, vol. ii., p. 382.

† *Cases of Smallpox subsequent to Vaccination, with Facts and Observations read before the Medical Society at Portsmouth, 29th March*, 1804: *addressed to the Directors of the Vaccine Institution.* By William Goldson. Portsea, 1884.

and to the issue of new instructions as to the period of taking vaccine, "on which point, it was now said, depended the whole success of the operation." Thus what was originally set forth as an operation for which any novice was competent, had developed into one of considerable delicacy with serious liability to miscarriage. Goldson, therefore, had fair reason to believe that his own observations and suggestions would meet with candid consideration, and, if verified, serve for general guidance in the practice of vaccination.

It is unnecessary to recite Goldson's cases. Interesting at the time, they are now commonplace. He found that inoculation with smallpox was possible at an interval after vaccination, and that infection with smallpox was equally possible under the like circumstances. One case is noteworthy for its connection with Jenner. A seaman, named Clarke, was successfully vaccinated on 4th November, 1800, and, returning from a voyage to the West Indies was put to the variolous test on 24th March, 1802, when he sickened with smallpox and was sent to Haslar. To prove that his malady was really smallpox, several persons were variolated from him. The Committee of the House of Commons was sitting on Jenner's first claim for public money, and Goldson wrote to Jenner to come to Haslar and see Clarke for himself; but Jenner was too astute to cumber himself with difficulties at a time when so much cash was in question. The case was mentioned to the Committee, but was treated as of no moment in presence of what they were pleased to regard as overwhelming evidence as to the perpetual virtue of vaccination.

Goldson's was a modest pamphlet—conjectural rather than demonstrative. He ventured to think it was possible that the efficacy of vaccine might be weakened by transmission from arm to arm, and that security might be restored by reversion to the cow—

> The casual Cowpox is produced by virus immediately from the animal; while the inoculated disease is the effect of *new matter* generated by the action of the other on the human subject. Whether

that *new matter* be possessed of the power to produce the same *permanent* properties as the *parent* virus, time alone can decide.

He likewise suggested that horsegrease might be inoculated on the nipple of the milch mare, and the virus used for equination. These and other points were advanced with a philosophic grace that ought to have commanded respect; but, on the contrary, his pamphlet was received with a howl of fury, and its author denounced as an ill-conditioned fellow—ignorant, prejudiced, pig-headed. It was safer to be pronounced anti-vaccinist than a vaccinator and harbour doubt as to any article of the Jennerian faith. Ring plied his bludgeon over the heretic, and Jenner wrote of him with malicious insolence—"All his reasoning is erroneous;" "his arrogance is increased by attention;" "he obstinately holds a veil before his eyes, and will not behold the vaccine light;" "one might as well contend with a blind man on the nature of a prism;" and so on. Goldson's offence was that he laid his finger on some of the weaker points of vaccination; that his sight was too keen, and his reasoning too cogent. At this day the questions between him and Jenner are decided by vaccinators themselves in Goldson's favour.*

Perhaps the most able attack on the practice of vaccination was delivered by Thomas Brown, surgeon, Musselburgh; and it is much to be regretted that his book, published in Edinburgh in 1809,† is so little known at this day. Brown had accepted vaccination, carried away, he admitted, by the common enthusiasm, and the unqualified audacity with which its claims were asserted—

The practice was introduced and recommended to the public by its Author as a perfect antidote and security against Smallpox

* Baron's *Life of Jenner*, vol. ii. pp. 338, 346, 348.

† *An Inquiry into the Anti-Variolous Power of Vaccination; in which from the state of the Phenomena and the Occurrence of a great variety of Cases, the most Serious Doubts are suggested of the Efficacy of the Whole Practice, and its Powers at best proved to be only temporary. From which also will appear the Necessity of and the proper period for again submitting to Inoculation with Variolous Virus.* By Thomas Brown, Surgeon, Musselburgh. Edinburgh, 1809. Pp. 307.

without any exception or reserve, and capable of banishing Variola from the catalogue of human misery. I have no hesitation in confessing that I became an early convert and advocate of the new practice; and it is now eight years and a-half since I have uniformly advised and practised Vaccination, in which period I may safely say, I have vaccinated upwards of twelve hundred patients, and have only inoculated three at the positive request of parents. This course I persevered in until the present time, notwithstanding I met with several instances where it appeared to fail in giving security; some about three years after the introduction of the practice; a few more about two years ago; and those which make part of the present volume within the last six months.

An epidemic, in which his own perfectly vaccinated patients fell victims to smallpox, at last opened his eyes to the delusion in which he was walking, and to the perversity with which he and others had resisted the light of truth—

I am convinced from what has passed under my own observation for the last three or four years, that we have been *all* guilty of rejecting evidence that deserved more attention, in consequence of the strong prepossessions which existed, from the very persuasive proof of Vaccination resisting inoculation and exposure to infection, and from our judgments being goaded and overpowered with the *positive* and *arbitrary* opinions of its abettors. I am now perfectly satisfied, from my mind being under the influence of prejudice and blind to the impression of the fairest evidence, that the last time Smallpox was prevalent, I rejected and explained away many cases which were entitled to the most serious attention, and showed myself as *violent* and *unreasonable* a partisan as any of my brethren in propagating a practice, which I have now little doubt we must ere long surrender at discretion.

When Brown first saw the vaccinated prostrate with smallpox, he concluded that there must have been some mistake about their vaccination; "for after Vaccination it was impossible to contract Smallpox;" but the evidence of his senses gradually overcame the phantasy imposed upon him, and like an honest man he proclaimed his error, and verified the experiences whereby he had been reluctantly corrected. He set forth with all particulars forty-eight cases of smallpox following vaccination within his own immediate cognizance, and though aware of many cases outside that cognizance, he limited himself to what he could attest with personal

assurance. He knew he would be told that the vaccinations had been imperfect, or that what he took for smallpox was some other eruption—

> It is strenuously contended [said Brown] by nearly every author, and by almost every practitioner, that Vaccination is a perfect antidote against Smallpox, if the disease be properly communicated; and Dr. Jenner and his relative, Mr. G. Jenner, positively assert, that they have had not one instance of failure in their own practice. They all therefore, and without hesitation, refer the whole series of failures that have been brought forward to the sweeping power of imperfect Vaccination, or to the blindness and stupidity of the medical practitioner who cannot distinguish between Smallpox and Chickenpox, a rash, or bug-bites.

Nor did Brown rest satisfied with proving that vaccination did not prevent smallpox. He also showed the fallacy of the variolous test. He adduced twelve cases in which vaccinated persons had been variolated as if they had never been vaccinated. Also four cases in which vaccination and variolation were effected simultaneously, the diseases running their courses concurrently, proving there was no antagonism between them; and since they could occur together, what reason was left for supposing that one might not succeed the other?

Having found liberty in the truth, he reverted to Jenner's writings, and reading them with opened eyes, he was not slow to detect and to demonstrate the laxity of statement, the contradictions, and absurdities with which they were pervaded. No reply was attempted: no reply, indeed, was possible. The surgeons of the Edinburgh Vaccine Institution issued *An Examination of Mr. Brown's Opinions and Statements*,* but they merely carped over non-essential details, and left the main issues wholly unaffected. What they had to show was that Brown's patients were either unvaccinated, or had not had smallpox; and unable to do this, they were unable to do anything.

Brown remained victor. He did not overthrow

**Report of the Surgeons of the Edinburgh Vaccine Institution, containing an Examination of the Opinions and Statements of Mr. Brown of Musselburgh on Vaccination.* Edinburgh, 1809.

vaccination, nor restore variolation, but he did make an end in Scotland of confidence in vaccination as an omnipotent safeguard against smallpox. The rite continued to be practised on humbler terms: "it did no harm": even Mr. Brown allowed that it might keep off smallpox for a time: and "there was reason to believe that it tended to make the disease milder when it did occur." Thirty years after his first publication, in 1842, Brown reaffirmed his position in a series of letters* to Dr. George Gregory, a sympathetic friend, and advised a return to variolation in view of "the acknowledged defects of the Jennerian practice"—a dismal alternative. But it is in vain to expect any man to be *much* in advance of his time: it suffices for honourable distinction that he *be* in advance. When Brown commenced practice, smallpox and other fevers were regarded as inevitable as storms and earthquakes, and the knowledge with which we are now so familiar, that they are engendered in foul habits and habitations, was for practical purposes unknown. Our reproach is, that knowing so much better, we surrender ourselves to a superstitious observance conceived in days of darkness.

**An Investigation of the Present Unsatisfactory and Defective State of Vaccination, and the Several Expedients proposed for removing the now Acknowledged Defects of the Jennerian practice. In a Series of Letters addressed to Dr. George Gregory, Physician to the Smallpox and Vaccination Hospital, London; which also are intended as an Answer to the Queries of the Academy of Science in Paris, proposed as the subject of a Prize Essay.* By Thomas Brown, formerly Medical Practitioner in Musselburgh. Edinburgh, 1842, pp. 139.

CHAPTER XXI.

MOSELEY, ROWLEY AND SQUIRREL.

It may be well to devote a chapter to those antagonists of Vaccination who, though right in their contention against cowpox, did more or less to discredit their cause by scurrility and extravagance. The faults of these men are frequently adduced as evidence of the absurd and brutal resistance with which Vaccination was encountered, but it is forgotten how intense was their provocation, and how the bad on one side was matched by the bad on the other. It was a contest between Smallpoxers and Cowpoxers, alike ignorant of the conditions of physical well-being. It is plain, however, in the light of our later experience, that much that was asserted by the Smallpoxers of the uselessness and harmfulness of cowpox must have been exactly and painfully true, though persistently and ferociously denied.

In the *Edinburgh Review* for October, 1806, appeared an article entitled "Pamphlets on Vaccine Inoculation," which may be taken as a reflection of the state of the controversy at that date, and as an index to the chief offenders against propriety. The article was written by the editor, Francis Jeffrey, and was a product of that perspicuous intelligence, which reduced to order whatever was subjected to its action, in much the same way that a housemaid "sets to rights" a library by ranging the books according to their sizes and bindings, and assorting the papers so that they lie neatly disposed. As is the habit of able editors, a view of the variolous controversy was evolved that might be comfortably accepted and confidently repeated by his readers—the evolution of such rational mirage being regarded for the time as veracious matter-of-fact.

First we may take the reviewer's evidence as to the extent and fury of the controversy—

The ample and public testimony offered in favour of Vaccination seemed for a while to set the question at rest; and, except in a few obscure pamphlets and communications to the medical journals, little was heard in opposition to it, till 1804, when Mr. Goldson of Portsmouth published six cases of Smallpox occurring after Vaccination, accompanied with observations, calculated to shake the confidence which was now very generally placed in the security of the Jennerian inoculation. These were answered by Mr. Ring and others, who endeavoured to show that, in some of his cases, Mr. Goldson's patients had not had the genuine Cowpox in the first instance, and that in others, they had not had the genuine Smallpox thereafter. This part of the controversy was conducted with temper, and with a reasonable degree of candour. In the end of the same year however, Dr. Moseley published his treatise on the Cowpox, in which the ravings of Bedlam seemed to be blended with the tropes of Billingsgate. Dr. Rowley followed on the same side, and in the same temper, with 500 cases of "the beastly new diseases produced from Cowpox," and attracted customers by two coloured engravings at the head of his work of "the Cowpoxed, ox-faced boy," and the "Cowpoxed, mangey girl." The battle now became general. The Reverend Rowland Hill thundered in defence of vaccination—Dr. Squirrel leaped from his cage upon the whole herd of vaccinators—Mr. Birch insisted upon stating his serious reasons for objecting to Cowpox—Drs. Thornton and Lettsom chanted pæans in its praise—Mr. Lipscomb strutted forward with a ponderous, wordy dissertation on its failures and mischiefs; and Messrs. Ring, Merriman, and Blair answered everybody; and exasperated all their opponents by their intemperance and personality. Charges of murder and falsehood were interchanged among the disputants without the smallest ceremony; the medical journals foamed with the violence of their contention; it raged in hospitals and sick-chambers; and polluted with its malignity the sanctity of the pulpit and the harmony of convivial philanthropy.

In the whole course of our censorial labours, we have never had occasion to contemplate a scene so disgusting and humiliating as is presented by the greater part of this controversy; nor do we believe that the virulence of political animosity or personal rivalry or revenge ever gave rise, among the lowest and most prostituted scribblers, to so much coarseness, illiberality, violence and absurdity as is here exhibited by gentlemen of sense and education discussing a point of professional science with a view to the good of mankind. At one time, indeed, we were so overpowered and confounded by the clamour and vehement contradictions of the combatants, that we were tempted to abandon the task we had undertaken, and leave it to some more athletic critic to collect the few facts and the little reasoning which could be discerned in this tempest of the medical world.

Furious was the controversy, but why was it furious? There are often great fights over little matters, but the reason is that the little matters are vitally related to the self-love of the combatants; and thus it was with the Cowpoxers and the Smallpoxers. The Cowpoxers set out with the absolute assertion that whoever submitted to their prescription would be secure from smallpox for life. Without proof, or with powerful sham proof, the assertion was endorsed by the mass of the medical profession, and there followed the conversion of the community in that sort of faith-panic which is described by Carlyle as Swarmery—

> All the world assenting, and continually repeating and reverberating, there soon comes that singular phenomenon called Swarmery, or the gathering of men in swarms; and what prodigies they are in the habit of doing and believing when thrown into that miraculous condition! Singular, in the case of human swarms, with what perfection of unanimity and quasi-religious conviction the stupidest absurdities can be received as axioms of Euclid, nay, as articles of faith, which you are not only to believe, unless malignantly insane, but are (if you have any honour or morality) to push into practice, and, without delay see *done*, if your soul would live.*

People thus enchanted do not like to be brought to their senses; and medical men, who in 1800 attested the perpetual prophylaxy of cowpox, were naturally very unwilling to be proved deceivers and deceived. When cases of smallpox were reported as following vaccination, they at first denied the possibility, saying that either there had been no vaccination, or that the smallpox was not smallpox. On the other hand, the Smallpoxers who had been snuffed out by the Cowpoxers, revived in presence of the discovered impotence of the new practice, and stoutly maintained, and cruelly demonstrated that unquestionable vaccinations were followed by unquestionable smallpox. It needs little acquaintance with human nature to see unlimited elements of bitterness in these conditions. To be convicted of imposture does not

* *Shooting Niagara.*

beget equanimity, nor contradiction as to plain matter-of-fact; and thus convicted were the Cowpoxers and thus contradicted were the Smallpoxers.

The Edinburgh reviewer described Dr. Moseley's treatise on cowpox as blending "the ravings of Bedlam with the tropes of Billingsgate." Some Billingsgate I concede, but not Bedlam at all. Much however depends on the point of view. Vaccination if regarded as a blessing in which the inspiration of heaven was consummated in the salvation of the human race from smallpox,* resistance thereto might appear, as Carlyle observes of creatures under enchantment, as "malignantly insane."

Dr. Moseley's book,† it is to be allowed, was singularly exasperating. He had spoken against cowpox from the outset, and was charged with condemning that of which he knew nothing; to which he cogently replied that he could scarcely know less than the gang of medical men who attested its perpetual efficacy in the newspapers in 1800 before they had any proper experience of it whatever. If his scepticism was premature, what was their credulity? Moseley had patience: no argument could be heard in the rage that set in for the new salvation. "Cowpox, I admit, is not contagious," he said, "but cow-mania is." When, however, in process of time it was seen in hundreds of cases that cowpox conferred no immunity from smallpox, he published in 1804 *Lues Bovilla*—a somewhat pompous treatise, with frequent touches of superfluous learning, and permeated with the irritating superiority of the true prophet—"You see it has turned out just as I predicted." Nor was he content to make general assertions: he specified the names and addresses of those who

* "Neglect not, I exhort you, such proffered blessing. Secure yourselves from danger; preserve your children; and render most grateful thanks to Almighty God who has so providentially permitted to man this means of defence against the pestilence that walked in darkness, and the sickness that destroyed in the noon-day."—*Address of the Rev. T. A. Warren to his Parishioners*, reprinted by the Royal Jennerian Society, 1803.

† *A Treatise on the Lues Bovilla or Cowpox.* By Benjamin Moseley, M.D. Second Edition. London, 1805. Pp. 142.

had been correctly vaccinated, or had taken cowpox from the cow, and had subsequently suffered from smallpox with their neighbours; also of cases of severe illness, injury, and death resulting from vaccination. Bluster was idle in presence of such facts. Even the Royal Jennerians had to eat humble pie, for in their Report, dated 2nd January, 1806, we read—

> It is admitted by the Committee that a few cases have been brought before them of persons having the Smallpox who had apparently passed through the Cowpox in a regular way.

With so much admitted by such furious fanatics, what might not be inferred!

Moseley was held in high esteem alike by the profession and the public, and his judgment enforced by so much serious evidence contributed heavily to the discredit of vaccination, and unfortunately to the resumption of variolous inoculation. That the reaction was extensive, especially in London, appears from numerous contemporary testimonies, which Moseley confirms in saying—

> The people at large are not to be reproached for putting their faith in this splendid imposition on humanity; and to the credit of their discernment and parental feelings, the middle and inferior classes have taken precedence in renouncing the delusion. At this moment, unless attacked by surprise, or with threats, or cajoled by artifice (all of which have been practised on them) there are now none among them in London and the adjacent villages who will expose their children to Cowpox Inoculation.

Rowland Hill was a religious and philanthropic notable in those days, and in common with many of his kind, was an enthusiastic vaccinator. A leading spirit in the Royal Jennerian Society, he had the school-room of Surrey Chapel constituted a vaccination station whereat Dr. Walker officiated. Nor was he content to patronise the practice, but was himself an energetic operator. Speaking at the annual meeting of the Jennerian Society, 17th May, 1806, he said—

> "With my own hands I have vaccinated upwards of 5000 persons," and, lifting up his eyes to heaven, exclaimed, "I solemnly declare before God, I have not had a failure in a single

instance. What then shall we say of the false and daring publications of those who denounce the benign practice, and how shall they answer for their conduct to their King, their Country, and their God!"

Hill and Jenner were great friends. Hill visited Jenner at Berkeley, and Jenner heard Hill when he preached at Cheltenham. Introducing Jenner to a nobleman, Hill remarked—

"Allow me to present to your Lordship my friend Dr. Jenner, who has been the means of saving more lives than any other man."

To which Jenner, being of a pious turn, sighed with meek effusion—

"Ah! would I, like you, could say *souls*."*

So committed and so possessed, Hill naturally resented the growing distrust of vaccination. It cut him deeply to be supposed a quack; and in 1806 he issued a pamphlet† relating his experiences as a Jennerite, defending his practice, and denouncing those who treated it despitefully. Moseley especially was subjected to severe and contemptuous condemnation. Hill's sanctimony and virulence, his vigour and venom compose a piquant mixture, and if we could tarry for amusement we might produce it abundantly from a variety of elegant extracts. Consider, for instance, this his adjuration, and its pitiful object—

Oh, the blessing of the Jennerian inoculation! Did ever man stand as Jenner so much like an Angel of God, an instrument in the hands of Divine Providence between the living and the dead till the plague was stayed!

Hill's latent assumption throughout his discourse was—

First, that all must have smallpox; and

Second, that all the vaccinated who escaped smallpox, owed their salvation to their Jennerisation.

It never apparently occurred to him that before Jenner was heard of, many passed through life exempt from

* Sidney's *Life of Hill*, p. 225.

† *Cowpox Inoculation Vindicated and Recommended from Matters of Fact.* By Rowland Hill, A.M. London, 1806. Pp. 72.

smallpox; nor, consequently, did he inquire *how* they escaped; nor *why*, when vaccination was introduced, escape should be placed to its credit.

The belief in the vicarious influence of vaccination comes out strongly, too, in Hill's pamphlet. Of Londoners there were then over 1,000,000, and of these, he says, at least, 100,000 had been vaccinated, and with this effect—

> Vaccination reduced the deaths from Smallpox in London to 10 per week; but after the Inoculators had been making their clamours, the applicants for Vaccination diminished, and the deaths soon rose to 100 per week.
>
> Now can effrontery itself deny that the introduction of Vaccination was the sole cause of reducing the fatality on the Smallpox list?

Thus one in ten being vaccinated, smallpox was reduced throughout the unvaccinated 9-10ths; and as soon as the vicarious operations dropped, up went the rate of mortality! Nor was Hill singular in this persuasion. He cited his friend Dr. Lettsom as writing to him, 25th March, 1806—

> Vaccination was gradually lessening the mortality in 1804, when about the middle of 1805 false reports against Vaccination gained very general credit, and Vaccination was nearly suspended; the consequence was the death of 1286 children in four months (September to December) or ten every day, each of whom might now have been alive had the blessing of Vaccination been accepted.

And again I find Lettsom wrote to Moseley, November, 1808—

> The increase of births and decrease of deaths has added 3000 lives annually to the population of London during the period that Vaccination has been practised.

Talk evidently sincere, and widely repeated, but with how little consideration for truth!

To return to Moseley. He was not the man to endure Hill's aggression submissively, and in a pamphlet entitled *An Oliver for a Rowland*,* he made a terrific reprisal.

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* *An Oliver for a Rowland; or, a Cowpox Epistle to the Rev. Rowland Hill under the wing of Surrey Chapel.* By Benjamin Moseley, M.D. Tenth Edition. London, 1807. Pp. 102.

The public were delighted with it, and in the course of a few months it ran through ten editions. Hill was generally regarded as a clerical mountebank, with more impudence than piety, and to see him knocked over, kicked, and rolled in the mire, was sport that carried many sympathisers. Moseley's opening address gives the key to the whole performance—

> Rowland,—I bought your pamphlet, entitled *Cowpox Inoculation Vindicated*, dated the 25th of March, 1806.
>
> I paid a shilling for it. Rowland,—it is not dear. The same quantity of folly, falsehood, and impudence, could not have been bought for twice the money of any other Cowpoxer from the Ganges to the Mississippi.
>
> But let me ask you, Rowland, what could induce you to take up your pen to attack me on the subject of Physic, who never attacked you on the subject of Religion? Would it not have been more prudent in you to have continued to expose yourself in your own trade in your own shop?
>
> As to my learned friend Dr. Lettsom (who is never out of the way when there is good to be done) being moved to instigate you, a Methodist parson, to enter into a medical controversy—that can only be accounted for by supposing he owes you a grudge, and put you into my hands for payment.

Paid he was with interest—gross and Rabelaisian; and Hill, when he had picked himself up and recovered his senses, discreetly retired from the combat.

Spite of his pomposity and buffoonery, there was good sense and humour in Moseley, and his resistance to the Jennerian mania was not ineffective. As he wrote in 1808—

> It is ten years since I began this Trojan war against Vaccinia; and if it be not yet ended, I have at least the satisfaction to see that her original troops are no longer able to defend her throne; and that the mobled Queen with "a clout upon her head where late diadem stood," has fallen to a new dynasty of mercenaries.*

In Dr. Munk's *Roll of the Royal College of Physicians* we read, that Dr. Moseley was appointed physician to Chelsea Hospital in 1788, "an office which he filled with

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* *A Review of the Report of the Royal College of Physicians of London on Vaccination.* By Benjamin Moseley, M.D. London, 1808. Pp. 86.

the highest *éclât* for more than thirty years"—until his death in 1819—

Though a shrewd practitioner, and undeniably a man of extensive mental capacity and very considerable attainments, Dr. Moseley was a violent opponent of Vaccination, on which his communications to the press were incessant. They did little credit to his medical penetration, or his qualifications as a dispassionate searcher after truth, and, happily for his reputation, are now well nigh forgotten.*

Are they? For what else is Dr. Moseley remembered? So that a man does his duty in the world, whether he be forgotten or remembered is not worth a thought; but Moseley's early and steadfast resistance to the Cowpox Imposture will long constitute his title to grateful recollection.

Dr. William Rowley, Physician to the Marylebone Infirmary, also left his mark in medical history as a determined opponent of vaccination. He had seen the profession and the public go mad about so many absurd novelties, that it did not surprise him that they should go mad about cowpox: and after due experience and investigation he delivered judgment on the craze and its pernicious effects in a pamphlet entitled *Cowpox Inoculation no Security against Smallpox*,† containing two coloured engravings representing the Cowpoxed Ox-Faced Boy, and the Cowpoxed Mangey Girl. Much ridicule was expended on these pictures, and to this day whoever wishes to be funny and create giggle over the

* *The Roll of the Royal College of Physicians comprising Biographical Sketches.* By William Munk, M.D. London, 1878.

† *Cowpox Inoculation no Security against Smallpox Infection. To which are added the Modes of treating the Beastly New Diseases produced from Cowpox, explained by two coloured copper-plate engravings, as—*

Cowpox Mange *Cowpox Evil or Abscess*
Cowpox Ulcers *Cowpox Mortification.*

With the Author's certain, experienced and successful mode of Inoculating for the Smallpox which now becomes necessary from Cowpox Failure, etc. By William Rowley, M.D., Member of the University of Oxford, the Royal College of Physicians, London, and Physician to the St. Marylebone Infirmary. London, 1805. Pp. 82. The first edition appeared 4th October, 1805, and a third 27th January, 1806.

early resistance to vaccination tells how one Dr. Rowley maintained that Jenner's benign virus induced the face of an ox on a boy; but like the majority of comic anecdotes, it is untrue. The engraving represents a comely lad with a swelling on the upper part of his left cheek, which was thought to give that side of his face an ox-like expression. Many a medical practitioner among the poor would at this day have little difficulty in presenting living examples of affliction answering to Rowley's pictures—and worse. It was, moreover, the fear or fancy of many at the time that inoculation with cowpox might beget bovine characteristics in the human species, and the fear or fancy was turned to inevitable account in jest and earnest. The jest is visible in some of Rowlandson's caricatures, and stories like this got into circulation—

A child at Peckham, after being inoculated with Cowpox, had its former natural disposition absolutely changed to the brutal, so that it ran upon all fours like a *beast*, bellowing like a *cow*, and butting like a *bull*.

In order to discredit Rowley, it is thought fair policy to connect him with such nonsense, and to have it supposed that he rested his case upon "the cowpoxed ox-faced boy:" it was far otherwise. He diligently tracked the vaccinators, and accumulated 504 cases of smallpox and injury after vaccination with 75 deaths, particulars being accurately specified. Nor was he content merely to report what he had ascertained. "Come and see," was his forcible argument. "I have lately had under my care," he wrote, "some of the worst species of malignant smallpox in the Marylebone Infirmary, which many of the faculty have examined and know to have been vaccinated." His trust in "Come and see," he still more powerfully exemplified in an exhibition of the injuries inflicted by vaccination in his Lecture Room in Savile Row in October, 1805. "Knowing," he said, "the cavilling character of the Cowpoxers, I determined to leave them no hole for retreat"; and therefore he brought together Joules, "the ox-faced boy, who also had a

terribly diseased elbow-joint"; Marianne Lewis, the mangey girl, "who was covered with blotches like a leopard"; "a load of children in a cart from the south of London," and others accompanied by their parents, and displaying their various maladies, said, "Behold the effects of the new disease that has been taken from the cow and implanted in humanity!" This painful exposition was continued over two days, and as he records, "the scene was truly affecting and distressing to all who witnessed it." An antagonist like Rowley is a serious factor in any controversy, and we may estimate the havoc he wrought by the extreme anxiety of the Jennerites to have him estimated by the supposed absurdity of the ox-faced boy.

To a man of practical temper like Rowley, the enthusiasm with which vaccination was at first advocated appeared akin to delirium—

> I have been in some vaccination storms, and have had the buttons torn off my coat, cloth and all, to convince me of the great and infallible excellence of Cowpox. I have seen some of the vehement vaccinators redden like a flame with fury, their lips quivering, their eyes starting out of their heads, their mouths foaming, their tongues dropping hard words, and their fists clenched like pugilists, ready to accompany their violent wrath with other knock-down arguments. In such circumstances, mild, investigating Philosophy quits the scene and leaves the field of battle to the Bedlamites.

The fury had subsided in 1805, and Rowley held that many medical men were deeply ashamed of the extravagance into which they had been committed, but lacked courage to make frank confession.

Rowley died in 1806, and the regard in which he was held was manifest in the crowds who flocked to his funeral. In the *Roll of Physicians*, Dr. Munk observes—

> Dr. Rowley was a determined opponent of Vaccination, and obtained an unenviable notoriety by his association with Dr. Moseley in opposing every conceivable obstacle to the reception and progress of that invaluable discovery.

The obstacles interposed were matters-of-fact, and as matters-of-fact were recognised and prevailed.

The controversy that followed the introduction of

Vaccination "gave birth," says the Edinburgh reviewer, "to an infinite number of publications of all descriptions" from which he could only select the most characteristic. Among these we find Dr. Squirrel, whose book is described "as the most entertaining of the whole"—

> We will venture to say, though we know it to be a bold assertion, that there never was anything so ill-written, or so vulgar and absurd, produced before by a person entitling himself a Doctor of Medicine. There is a certain nimbleness and agility about him, however, which keeps us in good humour, and he whisks about with such a self-satisfied springiness and activity, that it is really enlivening to look on him.

Turning up Squirrel's pamphlet* I find little or nothing to warrant this description. It is not ill-written, if judged by the standard of medical literature, and the "springiness" is a conceit of the reviewer's to sport with the Doctor's name. My own impression is that Squirrel was a dull fellow, jealous of cowpox as injurious to the trade in smallpox inoculation, and that he availed himself of the depression in the vaccination business to assert its superiority. He admits, indeed, that he kept silent during the Jennerian furore, "but the overwhelming torrent being gradually reduced to a feeble current," he reckoned that he "might now promulgate his opinion with a reasonable hope of success." He cites Jenner's account of the origin of cowpox in the greasy heels of horses, and proceeds to argue that the disease is scrofula, which its inoculation is certain to diffuse, whilst affording no protection from smallpox. He then adduces a number of cases in proof that inoculated cowpox had not averted smallpox, and had in several instances brought on serious and fatal ailments.

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* *Observations on the Cowpox showing that it originates in Scrophula, commonly called the Evil; illustrated with Cases to prove that it is no Security against the Smallpox. Also pointing out the dreadful Consequences of this new Disease, so recently and rashly introduced into the Human Constitution.* By R. Squirrel, M.D., formerly Resident Apothecary to the Smallpox and Inoculation Hospital. London, 1805. Pp. 76. A Second edition appeared in 1806.

Jenner in a letter to Moore from Berkeley, 28th February, 1810, thus refers to Squirrel—

> John Gale Jones, I see, has at length succeeded in obtaining the situation for which he has long been a candidate. This fellow had once the impudence to desire a man to call on me in Bedford Place to say, that he, Jones, would advise me immediately to quit London, for there was no knowing what an enraged populace might do. He was the writer of Squirrel's book, the long anti-vaccine columns in the *Independent Whig*, and many of the most violent papers in the *Medical Observer*. I was held up in his Forum for several nights as an object of derision; but I silenced him by the same weapon as I have others—contempt.*

Jenner's contempt was of a miraculous quality, operating insensibly upon those to whom it was applied. Some might fancy it was his idleness and others his cowardice; but he knew that it was *his contempt*, and that it blasted his adversaries in much the same way that vaccination blasted smallpox.

There is the woeful monotony of truth in these old pamphlets, not merely in the occurrence of smallpox after vaccination, but in the sadder stories of acute and chronic blood-poisoning. We recognise the narratives as true, for they are reproduced among us continuously by the same means, with the same miseries and agonies, and with the same death for grateful release.

It is clear from the testimony of Moseley, Rowley and Squirrel, confirmed too by others and by the Jennerites themselves, that the extension of vaccination met with a decided check in London. It was proved to many in a fashion that did not admit of dispute, that vaccination conferred no security from smallpox, whilst it was attended with dangers to health, certain if as yet undefinable. Variolous inoculation was again reverted to, but by diminished numbers; for that practice never had prevailed with popular good-will, but through sedulous medical persuasion as duty of dire necessity. Vaccination afforded excuse for hesitation, and, between rival claims, many contrived to elude either form of

* Baron's *Life of Jenner*, vol. ii., p. 367.

pollution. Thus indirectly as it were, vaccine inoculation set aside variolous, and when in 1840 the latter was forbidden by law, there was little of the practice left, whilst at the same time the majority of the population existed without Jennerian protection.

It is not to be forgotten that the early resistance to vaccination proceeded entirely from inoculators with smallpox. It was as yet unimagined that smallpox and other fevers were preventible, that their causes lay within control, and that health was the best defence of health. The world as yet lay in darkness as to those truths which we now recognise as laws of health, hygiene, and sanitary science; nor has the darkness rolled away, but is rolling away, and the time is not distant when to be vaccinated in order to be safe from smallpox will be accounted the drollest of absurdities.

Going back to the *Edinburgh Review*, we remark with curious interest how the chief position then asserted was the abiding efficacy of vaccination. Inoculators were ready to concede that it might possess a temporary prophylaxy, inasmuch as until one blood fever had subsided another was unlikely to supervene; but this view Jeffrey declined to entertain—

> It seems contrary to all analogy, and all rules of reasoning to suppose, *à priori*, that an immunity which is found to subsist for a certain time in the usual and healthful state of the system, will gradually and insensibly wear away without any apparent cause, or any sensible change to indicate its extinction; and the facts which bear at all upon the question, so far from suggesting or supporting such a supposition, seem, in our apprehension, completely to refute and discredit it.

Yet what in 1806 was accounted "contrary to all analogy," and "completely refuted and discredited by facts," is precisely what vaccinators now admit. Hence their cry for re-vaccination—septennially, triennially, annually. Dr. Lionel Beale, a great authority in the matter, recently owned to having been vaccinated ten times, and in terror of an epidemic was about to be vaccinated once more—a striking exemplification of

contemporary theory and practice. To have foreseen such an issue would have confounded the early vaccinators. When re-vaccination was mentioned to Dr. Pearson, he denied its possibility; "for," said he, "Vaccination is equivalent to smallpox, which cannot recur. If a child can be re-vaccinated, then it can take smallpox; *ergo* vaccination is not an equivalent for smallpox; and where then is the good of it?" Where indeed!

The Edinburgh reviewer was sufficiently impartial to recognise violence alike among Cowpoxers and Smallpoxers, and specified John Ring, Jenner's bully, as an offender, describing his *Treatise on Cowpox* as "one thousand and forty chaotic pages in defence of the new practice." Ring verified the criticism by issuing a pamphlet, *The Beauties of the Edinburgh Review* alias *the Stink-Pot of Literature;* reminding us of the man who writing to his wife from an inn-parlour remarked, "I must conclude, for an unmannerly Irishman is looking over my shoulder and reading every word I write;" an observation that was immediately clenched with, "You are a liar, sir; a liar!"

CHAPTER XXII.

WILLIAM COBBETT.

EVERYBODY appeals to common-sense, but what is common-sense? It is a question difficult to answer; and yet, as I propose to show that Cobbett's opposition to vaccination was justified by common-sense, I am bound to give some definition of the term.

Common-sense is reason as evolved from common experience. What the multitude of men have found to be true in the course of life, that is common-sense, which to question or resist is folly or fanaticism. This vulgar and vigorous rationality is often summoned to service where it has no vocation. For example, when it

was first taught that the earth was a sphere and that its inhabitants had antipodes, the revelation was denounced as contrary to common-sense; but it is obvious that in such a case (which represents myriads) it was wrongly invoked; the form of the earth being at the time outside common cognisance. As soon, however, as it was realised by experience that the earth was spherical and inhabited in all its quarters, then its rotundity became incorporated in the constitution of common-sense.

The realm of common-sense I therefore hold to be limited by its origin in common experience, and in matters above or beyond that experience, its dicta are illegitimate, and synonyms for presumption and prejudice.

William Cobbett was essentially a man of common-sense. His power lay in his community with the experience and reason of his countrymen; and, like all of us, he had the defects of his virtue. He continually applied his vulgar judgment to the criticism of men and matters beyond the range of his competence, and the result was a luxuriance of arrogance and contempt for which at this day we must resort to Mr. Ruskin for a parallel.

Such being the case, we have to inquire, What was the worth of Cobbett's opinion in the matter of vaccination? The attempt is sometimes made by vaccinators to withdraw their practice from popular discussion. They say it is a medical question for medical men; but the assertion provokes suspicion rather than confidence, for mystery is an invariable note of imposture. It is fair, I allow, to say of any abstruse knowledge that it can only be apprehended by those whose faculties are trained for its apprehension; but what is there abstruse about vaccination? With little trouble, everybody may know as much about it as anybody. It is the simplest of surgical operations. It is almost as easy as taking pills—instead of putting poison down the throat it is inserted into the skin. The operation may result in any number of pathological complications, but whether such complica-

tions be admitted or denied, what vaccination is prescribed for, namely, the prevention of smallpox, comes within the range of common observation. What, therefore, I have to answer is, that Cobbett's common-sense was competent to deliver judgment upon vaccination.

Moreover, the circumstances of the time compelled an opinion: silence or neutrality was impossible. England was swarming with vaccinators. All the fussy folk who had a taste for doing much good at little cost were plying the cowpox lancet. Encouraged by Jenner, they got vaccine, inoculated a victim, and propagated the virus from arm to arm. Here I may let Cobbett speak for himself—

> This nation is fond of quackery of all sorts; and this particular quackery having been sanctioned by King, Lords, and Commons, it spread over the country like a pestilence borne by the winds. Speedily sprang up the Royal Jennerian Institution, and branch institutions issuing from the parent trunk, set instantly to work, impregnating the veins of the rising generation with the beastly matter. Gentlemen and ladies made the commodity a pocket companion; and if a cottager's child was seen by them on a common (in Hampshire at least) and did not quickly take to its heels, it was certain to carry off more or less of the disease of the cow. One would have thought that half the cows in the country had been tapped to get such a quantity of stuff.*

Nor was vaccination merely forced on Cobbett's attention as a popular craze. He had to deal with it as a possible compulsory infliction. At a public meeting in 1803, Wilberforce and Dr. Clarke advocated the prohibition of smallpox inoculation and the enforcement of vaccination; and Cobbett, in a letter addressed to Wilberforce, rebuked the arbitrary project in a strain impressive and dignified as that of Burke himself. He wrote—

> It seems there are prejudices against cowpox which it is necessary to destroy by force. That there are prejudices, and very strong ones too, I am ready to allow, but I cannot agree that these prejudices should be eradicated by force; nor is it perhaps fair to use the degrading term as expressive of the dislike which so large a portion of the community entertain to the practice you are so

* *Advice to Young Men.* London, 1837. Sec. 262.

anxious to compel them to adopt. The charge of prejudice has been preferred but too often, and with but too fatal success against every one opposed to change. The truth is that whoever has been found to object to innovation, however wild in itself, however destructive in its consequences, has constantly been accused of prejudice; and as prejudice thus used implies a mixture of *ignorance* and *perverseness*, and as few persons are willing to be thought ignorant and perverse, the imputation is employed to coerce assent where reason hesitates.

He then aptly applied the repudiated recommendation of inoculation with smallpox as cause for hesitation in assenting to inoculation with cowpox—

There was, you must well remember, a strong and general objection, which for a long time prevailed, against Inoculation with Smallpox; and you cannot have forgotten that this objection was termed *prejudice*, and the persons entertaining it were regarded as *illiterate*, *ignorant*, or *perverse;* yet it now appears from the Address of your Royal Jennerian Society that it would have been well for the human race if the prejudices of those illiterate, ignorant, or perverse persons had universally obtained; for you now tell us that "Inoculation by spreading the contagion has considerably increased the mortality of Smallpox." With an example like this before our eyes, Ought we not to be very cautious how we adopt your new system of Inoculation with Cowpox?

Then turning upon Wilberforce in his favourite character of constitutional Englishman, he proceeded—

Give me leave to ask you, Sir, how you reconcile a proposition to enforce this novel practice with the spirit of that Constitution of which you profess to be so great an admirer, and with that freedom of which you wish to be regarded as one of the principal supporters? What I am opposed to, and what I am alarmed at, is the proposition to obtain an Act of Parliament which would in its operation be nothing short of compulsion on every man to suffer the veins of his child to be impregnated with the disease of a beast —a measure to be adopted in no country where the people are not vassals or slaves.

Lastly came these remarks which at this day have force and application greater even than when written—

I like not this never-ending recurrence to Acts of Parliament. Something must be left, and something *ought* to be left, to the sense and reason and morality and religion of the people. There are a set of *well-meaning men* in this country, who would pass laws for the regulating and restraining of every feeling of the human breast, and every motion of the human frame: they would

bind us down, hair by hair, as the Liliputians did Gulliver, till anon, when we awoke from our sleep, we should wonder by whom we had been enslaved. But I trust, Sir, that Parliament is not, and never will be, so far under the influence of these minute and meddling politicians as to be induced to pass laws for taking out of a man's hands the management of his household, the choice of his physician, and the care of the health of his children; for, under this sort of domiciliary thraldom, to talk of the liberty of the country would be the most cruel mockery wherewith an humble and subjected people were ever insulted.*

Cobbett, be it observed, thus addressed Wilberforce in 1803, when vaccination was as yet imperfectly tested, and its advocates were in the full blast of enthusiastic persuasion that to be Jennerised was to be made proof against smallpox for ever. When Cobbett had again occasion to write about cowpox, six years had passed away, bearing with them the phantastic certainty with which vaccination had been imposed upon public credulity. Nevertheless the practice was not abandoned: quackery once alive and lucrative, dies hard: but it was discredited, and its apologists exercised their ingenuity in devising explanations and excuses for its manifest failures. The Royal Jennerian Society had split between Jenner and Walker, and application to Parliament was resolved upon for two purposes—first, to save Jenner from poverty; and second, to provide funds for the maintenance of vaccination, voluntary subscriptions having fallen off irretrievably. In short, vaccination had broken down, and the House of Commons was called upon to save it from extinction. There were wire-pullers in the House and out of the House who were compromised by their patronage of Jenner and his imposture, and they had the craft and the power to transfer the responsibility of which they were sick to the national exchequer. With this explanation, we shall understand the following article from the *Register* of 18th June, 1808. Cobbett wrote—

This experiment with Cowpox, which has cost the nation £30,000 to Dr. Jenner, is now, it seems, to have an Act of Parliament to

* *Political Register*, 22nd January, 1803.

give it currency. Mr. Rose has brought in a bill for the purpose of establishing a central institution in London for the distribution of Cowpox matter, which bill in all appearance will pass; and this disgusting and degrading remedy will cost the nation another £4,000 or £5,000 annually, though it has been clearly proved not to have answered the purpose intended. This, however, I regard as cheap when compared with the menace of Mr. Fuller, who, in the debate, proposed a compulsory law on the subject. He took up the old idea of Mr. Wilberforce, who was for a law to prevent parents from having their children inoculated with Smallpox unless they chose to send them to pest-houses, or to some place at a considerable distance from any other habitations. This cruel and tyrannical proposition I opposed at the time; and I am happy to perceive that it is now almost universally exploded.

Whilst Cobbett could not arrest the action of Parliament, he was short-sighted in considering that the proposed endowment of vaccination was merely a question of the loss of a few thousands a year. We are saddled with vaccination at this day, its costs and mischiefs, by reason of the vote for the National Vaccine Establishment in 1808. As soon as an annual subsidy is placed on the estimates, interests are created, which not only perpetuate themselves, but constantly tend to enlargement; and such interests, once created, can only be got rid of when proved useless by agitation out of doors and persistent pressure on the House of Commons.

Referring to a notorious outbreak of smallpox among a vaccinated population at Ringwood in Hampshire, Cobbett continued—

I should like to have heard Mr. Rose's statement of the circumstances at Ringwood, whence, he says, it is evident that the failure arose "from the use of *improper matter*." That many persons, who had been inoculated with Cowpox, caught Smallpox and died at Ringwood, is a fact that even the Royal Jennerian Society cannot deny; and this being the case, what man in his senses will put any faith in the efficacy of Cowpox as a preventive of Smallpox? *The thing is done.* It *has failed*, and it is vain to endeavour to prop up its reputation; for, in a few years, it will become proverbial as humbug.

A prophecy, it will be said, that has not been fulfilled. True: but in Cobbett's time it advanced far to fulfilment. All the unqualified promises under which vaccination

was brought into practice, were one by one surrendered under the compulsion of experience. The mass of the people remained unvaccinated; the zeal for vaccinating the poor abated; and the practice continued among the middle and upper classes on the humblest pretexts—as something that might hinder or mitigate smallpox, and in any case do little harm. We have to recollect that the mania for vaccination which now prevails is a revival of a prescription which our forefathers had tested and found wanting. Vaccination fell into neglect, not because there was indifference to smallpox, but because it did not prevent that disease.

The excuse for the first failures of vaccination was, that spurious cowpox must have been employed—spurious cowpox being the artful invention of Jenner to cover disasters; artful, and yet absurd, for how could cowpox exist spuriously any more than smallpox? The precise fact, that spurious cowpox was the dodge of an unscrupulous quack was unknown to Cobbett, but he was sharp enough to recognise imposture, and thus wrote—

> The pretext of *spurious matter* is the weakest defence that ever was set up, because it is evident that such will always be an excuse. The Methodist pike who told his shoal of gudgeons that *if they had faith*, they might jump into a chalk pit without so much as spraining their ankles, answered all their reproaches with saying, that their broken bones were owing to their own sin in not having faith, and referred, for proof, to one among them who had accidentally escaped unhurt. All who catch Smallpox and die have been Cowpoxed with spurious matter, and all who have not yet caught Smallpox, after the Cowpox operation, have had the pure matter; and so it will be, to be sure, to the end of the chapter.
>
> *Who* is to collect this genuine matter, and *whence* is it to come? Who shall tell whether he inoculate with Cowpox or King's Evil? Or with many other disorders, one of which I will not name, but which I do hope, that fathers and mothers who have given their children that greatest of blessing, a pure stream of blood, will not forget when they are about to cause that blood to be impregnated with matter taken from the ulcerous bodies of others.

In this latter warning, we have to remark Cobbett's prescience. He knew that it was impossible to transfer organic virus from arm-to-arm without transferring more than was intended, inclusive of the dreadful disease he

indicated. Vaccinators naturally denied the possibility of such extra transmission; for if they had admitted the possibility, they must have ceased to vaccinate. M. Ricord has put the alternative plainly—

> The obvious fact is, that if ever the transmission of this disease with vaccine lymph is clearly demonstrated, *Vaccination must be altogether discontinued.*

The clear demonstration demanded by M. Ricord has been abundantly supplied; and what at one time was conveniently considered questionable, is now openly confessed. Mr. Brudenell Carter, writing in the *Medical Examiner*, 24th May, 1877, testifies—

> I think that syphilitic contamination by vaccine lymph is by no means an unusual occurrence, and that it is very generally overlooked because people do not know either when or where to look for it. I think that a large proportion of the cases of apparently inherited syphilis are in reality vaccinal; and that the syphilis in these cases does not show itself until the age of from eight to ten years, by which time the relation between cause and effect is apt to be lost sight of.

And we have Sir Thomas Watson's memorable declaration in the *Nineteenth Century*, June, 1878—

> I can readily sympathise with, and even applaud, a father who, with the presumed dread or misgiving in his mind, is willing to submit to multiplied judicial penalties rather than expose his child to the risk of an infection so ghastly.

Thus belated, thus after infinite mischief to the public health, the Nestor of Medicine appears and solemnly allows that the warning of William Cobbett, given seventy years before, was a true warning, and that worthy of praise are the wise parents who give it heed.

Cobbett, grateful for escape from compulsory vaccination, overlooked, I said, the danger perpetuated through the endowment of the practice. He was overjoyed at Canning's emphatic declaration, that "he could not imagine any circumstances whatever that would induce him to follow up the most favourable report of the infallibility of vaccination with any measure for its compulsory infliction." Hence he continued—

I am glad to perceive that the Ministry took care to intimate their decided hostility to any law for propagating Cowpox by *force*, by the aid of *pains* and *penalties*. This being the case, I care little about Mr. Rose and his Cowpox Institution. Those who choose to have their children impregnated from that shop, will be at liberty to do so; and those who wish to avoid it, may. This is all right; though it may be very foolish for Government to interfere in such a matter. I think we may thank the events at Ringwood for the ministerial protest against compulsory measures. It would have been curious enough to see people paying penalties for being so obstinate as not to consult their own health, or that of their children.

What Cobbett thought would be "curious enough" we witness daily. English liberty, if it has advanced in some directions, has gone back in others since Cobbett wrote. Parents are now haled before magistrates, fined and imprisoned, because (knowing that vaccination cannot avert smallpox, whilst it may seriously injure the health of their children, and even cost them their lives) they refuse to submit to the infliction. Never, perhaps, was there a more impious invasion of liberty than compulsory vaccination, and yet we have free and enlightened Englishmen who excuse and defend it! These are the Pharisees of Liberalism, blatant over tyranny, extinct or foreign, but dull to similar tyranny within their own domain. They garnish the sepulchres of the prophets of freedom, but (in their petty measure) repeat the deeds of those who persecuted and slew them.

Lastly, in the article from which I have been quoting, Cobbett assumed that the resort to the House of Commons for money was evidence that the enthusiasm for vaccination was abating. He wrote—

The present application to Parliament is a pretty good proof that Cowpox is beginning to be *blowed upon*. The Royal Jennerian Society *wants funds*. The subscribers have fallen off; and so application to the public purse has become necessary. *Why* have the subscribers fallen off? Their *humanity* has not waxed cold. It were slander, indeed, to suppose that. But I suspect that their *faith* has waxed cold; and when that is the case, zeal soon slackens its operations, more especially when these operations consist chiefly in the expenditure of money.

The fact was, that as vaccination failures multiplied,

Jenner tried, *more suo*, to make a scape-goat of Walker, the Resident Inoculator of the Royal Jennerian Society. There was a dreadful row, and a secession of the better part of the members with Walker, who set up the London Vaccine Institution. Those who adhered to Jenner were not of the philanthropic and subscribing order, but they had political influence, and used it to get rid of their liabilities, first in obtaining a vote of £20,000 for Jenner, and second in the establishment of a National Vaccine Establishment with a subsidy of £3,000 a year.

So far Cobbett in his *Register*, where he had no occasion to discuss vaccination again; but toward the end of his life, 1829-30, he produced a series of papers entitled *Advice to Young Men*, in which he reiterated and enforced his protest against the Jennerian imposture—

I contend [he wrote] that the beastly application could not, in nature, be efficacious in preventing Smallpox, the truth of which assertion has now been proved in thousands upon thousands of instances. For a long time, for ten years, the contrary was boldly and brazenly asserted. . . But Smallpox, in its worst form, broke out at Ringwood, and carried off, I believe (I have not the account at hand), more than a hundred persons, young and old, *every one of whom had had the Cowpox "so nicely."* And what was then said? Was the quackery exploded? Not at all: the failure was imputed to *unskilful operators:* to the *staleness of the matter:* to its not being of the *genuine quality.* Admitting all this, the scheme stood condemned; for the great advantages held forth were, that *anybody* might perform the operation, and that the matter was everywhere abundant and cost free.

But these were paltry excuses: the mere shuffles of quackery; for what do we know now? Why, that in *hundreds* of instances, persons Cowpoxed by JENNER HIMSELF, have taken the real Smallpox afterwards, and have either died from the disorder or narrowly escaped with their lives! I will mention two instances. The first is Sir Richard Phillips, whose son, several years after Jenner had given him the insuring matter, had a very hard struggle for life, under the hands of the old-fashioned, seam-giving, and dimple-dipping Smallpox. The second is Philip Codd, Esq., of Rumstead Court, near Maidstone, whose son had a very narrow escape under the real Smallpox, and who also had been Cowpoxed *by Jenner himself.* Mr. Codd I have known, and have most sincerely respected, from the time of our both being eighteen years of age. When the young gentleman, his son, was very young, I, having him on my knee one day, asked his kind and excellent

mother whether he had been *inoculated*. "Oh, no!" said she, "we are going to have him *vaccinated*." Whereupon I, going into the garden to the father, said, "I do hope, Codd, that you are not going to have that beastly cow-stuff put into that fine boy." "Why," said he, "you see, Cobbett, it is to be done by *Jenner himself*." What answer I gave, what names and epithets I bestowed upon Jenner and his quackery, I will leave the reader to imagine.

Now, here are instances enough; but every reader has heard of, if not seen, scores of others. Young Mr. Codd caught Smallpox at a school; and if I recollect rightly, there were several other vaccinated youths who did the same at the same time. Quackery, however, has always a shuffle left. Now that Cowpox has been proved to be no guarantee against Smallpox, it makes it *milder* when it comes! A pretty shuffle, indeed, this! You are to be all your life in fear of it, having as your sole consolation, that when it comes (and it may overtake you in a camp or on the seas) it will be milder! It was not too mild to kill at Ringwood, and its mildness, in the case of young Mr. Codd, did not restrain it from blinding him for a suitable number of days.

I shall not easily forget the alarm and anxiety of Mr. and Mrs. Codd on this occasion—both of them the best of parents, and both of them punished for having yielded to fashionable quackery. I will not say *justly* punished; for affection for their children, in which respect they were never surpassed by any parents on earth, was the cause of their listening to the danger-obviating quackery. This, too, is the case with other parents; but parents should be under the influence of *reason* and *experience*, as well as under that of affection; and *now*, at any rate, they ought to set this really dangerous quackery at naught.

Such was Cobbett's case against vaccination, and I ask, Was he not justified in his opposition? He saw vaccination introduced to the world as an infallible preventive of smallpox, and he lived to see the claim gradually minimised until reduced to that of making smallpox milder! Even thus abated, he had to stigmatise the claim as a last shuffle of quackery. It is asserted to this day, that vaccination makes smallpox milder, but the pretence is exploded whenever we demand, How do you know? In any case, or in any number of cases of smallpox, Who can define the severity that has been reduced by vaccination? any more than if I were to assert that vaccination intensifies smallpox, it would be impossible to confute me. We can only meet unverifiable assertion

with indifference or contempt. If it pleases people to believe in metempsychosis or the constitution of the moon in green cheese, the wise leave them to the enjoyment of their humour: On the other hand, I have to remark, that smallpox is a disease of wide range of intensity, from an ailment almost trivial to one invariably fatal; and this wide range of intensity was as characteristic of the disease before as since the introduction of vaccination. On what pretext then are mild cases of smallpox attributed to the influence of vaccination? There are mild and malignant cases of smallpox alike among the vaccinated and unvaccinated, and not unfrequently when the vaccinated and unvaccinated are found in approximate conditions, as in the same household, it is the unvaccinated who are most lightly afflicted, or who make the better recovery.

It often helps to a clearer apprehension of a position if we endeavour to conceive its opposite. We have seen Cobbett as an opponent of vaccination: let us try to think of him as its advocate. Suppose he had joined with the polite and educated mob in hailing Jenner as the saviour of mankind from smallpox, and assured the readers of the *Register* that they would be secure from the disease for ever if inoculated with cowpox—an easy and harmless operation. Then after a while imagine him reporting that he had been misled—that the operation was not so easy as represented, nor always so harmless. By and bye he would be the bearer of a more serious revelation. Some of the vaccinated, warranted secure, had taken smallpox, but such misadventures, he would explain, were due to the use of a wrong sort of cowpox, of which there was a spurious variety. But the suggestion of spurious cowpox creating alarm and discouragement of vaccination, it would be necessary for him to counteract the declaration with the avowal that by spurious cowpox was not meant spurious cowpox, but simply irregularities in the action of the genuine virus on the arms of the vaccinated. But even these excuses would be insufficient. It was not difficult to ascribe

smallpox after vaccination to careless practice, or to virus that was not the right sort of cowpox; but when smallpox was found to occur in numerous instances after Jenner's own vaccinations and those of the most accomplished practitioners, What was to be said? Why, what was said, that when vaccination did not prevent smallpox, it made it milder!

Imagine, if we can, Cobbett's honest and vigorous intelligence retreating through this slush of apology and prevarication! Yet through such slush every follower of Jenner had to trudge.

I am not intent on setting Cobbett forth as a model of wisdom. I simply maintain that his common-sense was adequate to the judgment of vaccination, and that it was correctly exercised. Of physiology and hygiene he was as ignorant as his contemporaries; but if a lotion were sold to prevent toothache, and it did not prevent toothache, it would be safe to denounce its vendors as quacks, even though the vendors happened to be the Royal College of Physicians and the Royal College of Surgeons. The causes of disease were unconsidered in Cobbett's days. It was not asked why people suffered from smallpox and other fevers, nor whether fevers were avoidable. Such maladies were accepted like bad weather, and encountered by medical dodges, or by charms like vaccination, the more irrational and nasty being taken for the more effective. Cobbett himself, if he did not believe in vaccination, believed in inoculation with smallpox. He had his children poxed in infancy, and when he argued against vaccination, it was in the confident possession of a surer prophylactic. Taking smallpox for a probable calamity that could only occur once in a lifetime, it seemed to him expedient to incur the disease when convenient, and to have done with the dread of it. How far he was mistaken in this course I need not stay to debate. Suffice it to say, that he thought he could make sure that smallpox was smallpox, whilst what cowpox might be none could tell, especially after transmission through arms and constitution unnumbered and unknown.

The causes of smallpox, I said, were unconsidered in Cobbett's days. It never even entered into Jenner's head that the disease might be a consequence of bad conditions of life; nor did he try to explain why the malady was on the decrease ere he appeared with his magical prescription. The decrease was claimed for vaccination, but it had set in before vaccination was heard of, and was continued among those who never received it. No sanitary improvements had been effected to account for the abatement of the disease. To what, then, was it due? I answer, in part at least, to a progressive change in the diet of the people—to the substitution of tea for malt liquors, and to the displacement of arid fare by potatoes. The food of city folk up to the close of last century was closely akin to that of men at sea, and their scorbutic habit of body was notorious—a habit that rendered acute or chronic whatever disorders they were subject to. The remedy came of inclination and necessity rather than of intention. Tea was instinctively preferred by women, and the dearness of provisions compelled resort to the potato, easily grown and grateful to the palate as a mitigant of the saltness of beef, bacon, and fish. If any are disposed to dispute the fact of this revolution in the popular dietary, they may be referred to Cobbett. He witnessed the change, and persistently denounced it. Tea-drinking was to him an abomination. It was a slatternly indulgence, costly to the poor, and innutritious. Potatoes were as detestable. They were trash as compared with bread; wasteful, dirty, and unfit to satisfy a man's appetite. It is true that tea and potatoes are poor forms of food, but the one as a substitute for beer, and the other as an antiscorbutic, were eminently useful. It is not said that smallpox is caused or prevented by food, proper or improper, but that the character of food may predispose to disease, and intensify it; as is manifest on ship-board. Hence it is (in the absence of other adequate influences) that I am disposed to ascribe the abatement of smallpox which set in toward the close of last century to the

better blood of the people ameliorated by that increased consumption of tea and potatoes, against which Cobbett so blindly and vainly testified.

A last word about Cobbett. His prejudices had nearly always a creditable root. He hated potatoes because they were strenuously recommended by Wilberforce and other good and goody people as cheap food for the poor. Cobbett's contention was, that not cheap food, but political justice was the true remedy for popular misery. It was very nice of Wilberforce and his friends to be kind to the poor, but, said Cobbett, if they were first just, the poor might dispense with their kindness. If the poor had their own, they might have beer instead of tea, and bread and beef and bacon instead of potatoes, with much else besides. Cobbett was often enough in error, but behind all his perversities lay ardent good-will for the welfare of the greatest number of his countrymen; and the consideration now enjoyed by the working classes is largely due to his dauntless spirit and ununwearied exertions in presence of what appeared at the time to be omnipotent opposition.

CHAPTER XXIII.

THE GROSVENOR CASE.

It may be asked, Why, if Vaccination was proved useless and injurious, was it not entirely discontinued? but the question implies a logical consistency which is rarely exemplified in human experience. Vaccination was discontinued, but it was not entirely discontinued: it was chiefly continued among the upper and middle classes where fees were to be had for its performance. It was admitted that the rite might not prevent small-pox, but it would make it milder. The last thing a medicine man admits is, that he is helpless and can do

nothing. Even in presence of that for which there is no remedy, it tends to his importance, and the satisfaction of the patient, and those around the patient, to make believe to do something. Now for smallpox, there was no preventive. Its causes were unknown. It broke out, and it disappeared, none knew how. Jenner's household was devastated with fever, but he never asked, why? As observed disease was accepted like so much bad weather. Whether fevers were avoidable, or whether they were consequences of ill living, were questions as yet outside cognizance. The predominant thought about smallpox was, that it might be dodged, be it from God or devil. Inoculation with smallpox was a dodge with disagreeable accompaniments: inoculation with cowpox was a dodge on easier terms: by a trick, that left every evil circumstance unaffected, smallpox was to be got rid of. In the nature of things, the dodge was ineffective—mercifully ineffective; for who that is wise would care to have the consequences of evil abated save by the putting away of evil? The dodge proved illusory in the presence of those who recommended it, but whilst a manifest failure as to the main intention, they had the craft to shift its efficacy to rendering the disease milder—a claim as to which no test was immediately available. Moreover, vaccination had the merit of action, which the quack, whether lay or professional, insists on at all hazards. To confess ignorance and inability is self-denial for which the quack's mind is unequal, as whoever is ailing and has friends may perceive. All come bearing advice and prescriptions for the control of nature, when, with simple quiescence and a right disposition of circumstances, nature is instant to effect recovery.

The failures of vaccination to prevent smallpox were chiefly visible among the poor, smallpox being predominantly an affliction of poverty; but in 1811 a case occurred in aristocratic life which produced more talk and dismay than scores of similar cases among trades-folk and artizans. Robert Grosvenor, son of Earl Grosvenor, vaccinated by Jenner in 1801 when a puny babe of a

month old, fell ill on 26th May, 1811; in a few days smallpox developed, became confluent, and the lad narrowly escaped with life. There was no mistake about the vaccination; the mark on the boy's arm indicated "the perfect disease"; he was attended by Sir Henry Halford and Sir Walter Farquhar, and was visited by Jenner, who happened to be in town; and, in short, the evidence of the impotence of vaccination to avert smallpox was complete and indisputable. The commotion was intense, and in a letter from Jenner to Baron we see how it affected his mind. He wrote—

Cockspur Street, Charing Cross,
11th June, 1811.

My Dear Friend,—It will probably be my lot to be detained in this horrible place some days longer. It has unfortunately happened, that a failure in vaccination has appeared in the family of a nobleman here; and, more unfortunately still, in a child vaccinated by me. The noise and confusion this case has created are not to be described. The vaccine lancet is sheathed; and the long concealed variolous blade ordered to come forth. Charming! This will soon cure the mania. The Town is a fool—an idiot; and will continue in this red-hot—hissing-hot state about this affair, till something else starts up to draw aside its attention. I am determined to lock up my brains, and think no more *pro bono publico;* and I advise you, my friend, to do the same; for we are sure to get nothing but abuse for it. It is my intention to collect all the cases I can of Smallpox after supposed security from that disease. In this undertaking I hope to derive much assistance from you. The best plan will be to push out some of them as soon as possible. This would not be necessary on account of the present case, but it will prove the best shield to protect us from the past, and from those which are to come.—Ever yours, Edward Jenner.*

The defence, therefore, was, that as an attack of smallpox did not always avert a second attack, it was not reasonable to expect that vaccination should be more effective; and to make good this position, a diligent search was instituted for cases of repeated smallpox. Many were found, though they were generally regarded as rarities, whilst their reality was frequently disputed; but whatever their number or genuineness, they were insig-

* Baron's *Life of Jenner*, vol. ii. p. 161.

nificant in comparison with the instances of smallpox subsequent to vaccination. Moreover, the Jennerites were taunted with their late discovery of smallpox after smallpox. Why had they not stated from the outset that smallpox might follow vaccination as smallpox followed smallpox? Why, on the contrary, had they asserted vaccination to be an absolute and life-long defence against smallpox? Why had they abused as fools or denounced as liars all the early reporters of smallpox after vaccination? And why did it require evidence, that could not possibly be wriggled out of, to bring them to an acknowledgment of the truth?

But even in presence of such evidence, Jenner persisted in his asseverations as if he had lost the very sense of truth. Writing to Miss Calcraft on 19th June, 1811, he actually claimed that he had foreseen and predicted such disasters as had occurred in the Grosvenor family! Here are his words—

> Take a comprehensive view of Vaccination, and then ask yourself what is this case? You will find it a speck, a mere microscopic speck on the page which contains the history of the vaccine discovery. In the very first thing I wrote upon the subject, and many times since, I have said the occurrence of such an event should excite no surprise; because the Cowpox must possess preternatural powers if it would give uniform security to the constitution, when it is well known that Smallpox cannot; for we have more than one thousand cases to prove the contrary, and fortunately seventeen of them in the families of the nobility.

Obviously had such been his uniform testimony, the Grosvenor incident would have excited neither surprise nor alarm; and mark this additional hardihood—

> Indeed, I have often said it was wonderful that I should have gone on for such a series of years vaccinating so many thousands, many under very unfavourable circumstances, without meeting with any interruption to my success before. And now this single solitary instance has occurred, all my past labours are forgotten, and I am held up by many, perhaps the majority of the higher classes, as an object of derision and contempt. . . . What if ten, fifty, or a hundred such events should occur? they will be balanced a hundred times over by those of a similar kind after Smallpox.

Whilst thus he maintained that it was far more extra-

ordinary that young Grosvenor had smallpox after vaccination than that others should have smallpox after smallpox, he went on to assert that vaccination had saved the lad's life!

> The child would have died (that is universally allowed) but for the previous Vaccination. There was but little secondary fever; the pustules were sooner in going off than in ordinary cases; and, indeed, the whole progress of the disease was different. It was modified and mitigated, and the boy was saved.*

Such was the *mot d' ordre*. If Grosvenor had not been vaccinated, he would have perished! The National Vaccine Board reported on the case to the same effect, and the faithful suffered themselves to be re-assured.

In connection with 1811 and London smallpox, there is a letter to Dr. Lettsom which throws still farther light on Jenner's temper and philosophy. He wrote—

> CHELTENHAM, *22nd November, 1811.*
>
> I have considered London as the centre of opposition to the vaccine practice; but even there, in spite of the base and murderous designs of a few bad minded individuals, the Smallpox has wonderfully decreased; and in the provinces its mortality has lessened in a still greater proportion. For the great and grand effects of Vaccination the eye must quit this little spot, and survey it among other European countries, and still more particularly among the vast empires of Asia and America. In Mexico and Peru the disease is nearly extinct. The documents which pour in upon me from these distant regions fill me with inexpressible delight. You shall have copies when I can get them transcribed.
>
> The chief impediments to the general adoption of Vaccination in England are, I am confident, our newspapers and some of our magazines. Whenever a case of what is called failure starts up, in it goes to a newspaper, with all the exaggeration with which envy and malice can garnish it. †

Was there ever a more delicious bit of self-revelation! The wicked newspapers! The base, murderous and bad minded enemies of vaccination! The smallpox of London reduced by vicarious vaccination in spite of its ingratitude! The consolation derived from the survey of the

* Baron's *Life of Jenner*, vol. ii. p. 158.

† Pettigrew's *Memoirs of J. C. Lettsom, M.D.* London, 1817. Vol. iii. p. 405.

countries of Europe and the vast empires of Asia and America with inexpressible delight from Mexico and Peru! Not Mrs. Jellyby herself lost in an atmosphere of Borrioboola-Gah is more piquant.

CHARTER XXIV.

DR. JOHN WALKER.

JENNER'S references to the good effects of vaccination in London were curiously inconsistent. That vaccination in which he professed to rejoice was chiefly the work of Dr. John Walker, whose practice he had denounced as so widely at variance with what he considered correct, that even the wreck of the Royal Jennerian Society was not thought too heavy a price to pay for deliverance from complicity with him. The London Vaccine Institution, established in 1806 by Walker and his friends, was responsible for the large majority of vaccinations effected in the metropolis. Walker was a pure enthusiast, of boundless energy, with a craze for vaccinating. Adverse results had no effect upon him: he did not deny, but simply did not recognise them, and held on prophesying and practising with mechanical persistency. Nevertheless, he ran aground. The income of the Institution had dwindled to less than £100 a year when Andrew Johnstone, a Cumberland man, a school-fellow of Walker, came to his assistance. With a commercial eye he surveyed the situation. He perceived that though vaccination had fallen into disrepute, there remained many believers who only required stirring up and solicitation to provide funds to keep Walker going and to yield the collector a satisfactory commission. As the Royal Jennerian Society had ceased to exist for any active purpose in 1810, nothing remaining "but a Patronage, a Presidency, and an unorganised body of Subscribers and Governors," it occurred to him that it would be good

policy to annex these to the revived enterprise, and in due course a union was effected, and the LONDON VACCINE INSTITUTION AND ROYAL JENNERIAN SOCIETY became the title to conjure with. An attempt was made to secure Jenner for President, but that was too bold a stroke. He thus answered the application—

CHELTENHAM, *3rd September, 1813.*

Although it must be evident that every institution which has for its object the extension of Vaccine Inoculation, must have my best wishes for its success, yet, for reasons which on reflection must be obvious, you must see the impossibility of my accepting the offered appointment.

Highly impressive were the Reports of the reconstituted Institution under the patronage of the Corporation of the City of London with the City Arms on the covers. Subsequently the King, George IV., appeared as patron, and the City Arms gave place to the Royal Arms. Among the presidents were the Archbishop of Canterbury, four or five Dukes (one of them Wellington), half a dozen Marquises and as many Bishops, about a score of Earls, with M.P.'s and pious and philanthropic notables many. So much was due to the tact of Andrew Johnstone, who understood the use of names, who never dropped one of the least influence, and, spite of Jenner's ill-will, dealt with his honours and countenance as though they belonged to the Institution. Business is business, he would have said, and holds no reckoning with pique and dislike. Nevertheless the financial results did not correspond with the overpowering patronage. The income of the Institution never attained £1000 a year, whilst the bills for advertising and printing sometimes approached £500. In the Report for 1827 we find the operations thus summarised—

Vaccinated during 1826 by Dr. Walker, - -	4,217
From the beginning, 1803, - - - -	65,750
By appointed Inoculators in London and environs in 1826, - - - - - -	16,999
From the beginning, - - - - -	237,119
By appointed Inoculators in the country in 1826,	21,261
From the beginning, - - - - -	548,430

The income of the Institution in 1826 was £620 15s., and the expenditure £715 12s., leaving a deficit of £94 17s.

The figures are interesting, for they afford some idea of the extent of London vaccination during a quarter of a century. The operations of the Vaccine Institution lay chiefly among the poor—the vast majority in London as in every city; and if we allow that in the course of five-and-twenty years, 350,000, in a population of upwards of 1,000,000 in the flux of life and death, were operated on, we give a liberal estimate in favour of vaccination. That even so many could have much effect on the prevalence of smallpox (except for aggravation) is incredible, unless the vicarious action of vaccination be seriously asserted. Turning over Walker's report it is amusing to observe how any abatement in London smallpox was attributed to vaccination, and any increase to its neglect—an ingenuous exemplification of the fable of the Fly and the Wheel.

The appointed inoculators of the Institution were a numerous body — 250 names and addresses are given in one of the Reports. They were chiefly London tradesmen with a taste for doing what they thought "good." As vaccination came to be regarded as professional work, these "unqualified practitioners" gave cause for offence, but Walker held stoutly to his opinion, which he shared with Jenner, that vaccination might be performed by any man or woman. In Walker's words, "It is easier to perform the whole business of vaccination than it is to thread a needle—yea, it is easier."

The annexation of the remains of the Royal Jennerian Society by Walker was much disliked by Jenner and his associates; and when the revived enterprise showed signs of prosperity, their dislike developed to open enmity, and John Ring's services as bravo and satirist were called into requisition. He first tried his hand, anonymously, in a volume of doggerel, published in 1815,

entitled *The Vaccine Scourge,** in which Walker is represented as singing—

I am a jolly beggar,
From Cockermouth I came;
I do pretend to be a Friend,
John Walker is my name;
And a-begging we will go, will go, will go,
And a-begging we will go.

The verses, extending over a hundred pages, are wretched stuff, vulgar and malevolent, and a few extracts from the Preface will indicate the animus of the entire performance. Ring's assumption was, first, that Walker was a rogue from whom the public required to be protected; second, that his Institution was superfluous; and third, that if greater facilities for vaccination were wanted in London, it should be left to the Government to provide them—

These hints may serve to warn the public. Dr. Walker is an artful, avaricious, and ambitious man; but let him be cautious how he acts when he tries to exercise his art, to glut his avarice, and to gratify his ambition. Let him recollect what was inscribed on the tombstone of an infamous scoundrel—

"Lie still if you're wise;
You'll be damned if you rise."

We recommend him and his accomplices not to try to obtain money by false pretences. A Vaccine Institution has long been established by the Legislature, where, as well as at other Institutions, matter may be procured free of expense; and no one who has much zeal in the cause of Vaccination will find much difficulty in procuring it. If farther aid is necessary, let it be granted by Parliament, and not to a set of swindlers. It is not meet to take the children's bread and throw it to the dogs.

Many of the agents of the London Vaccine Institution were chemists and apothecaries, and these, according to Ring, had an interest in the propagation of smallpox—

To exterminate Smallpox by means of chemists and apothecaries, the greatest friends of Smallpox, is to cast out devils by

* *The Vaccine Scourge containing the New Beggar's Opera* alias *the Walkerian Farce*, alias *the London Vaccine Hoax; in answer to Dr. Walker's Jenneric Opera. A Rod for the Fool's Back.* London, 1815. Pp. 122. Price 3s.

Beelzebub, the prince of the devils. You might as well expect a foxhunter to destroy the breed of foxes, or a ratcatcher to exterminate the race of rats.

The *Vaccine Scourge* producing little effect, Ring returned to the charge in the following year, 1816, with *A Caution against Vaccine Swindlers and Imposters.** The *Caution* is a series of libels, the puerility and extravagance of which were their own nullification. A motto was taken from the *New Monthly Magazine* for the title-page, as follows—

> The Jennerian discovery has shed a brilliant lustre on our era; but unfortunately, the discovery has been in a great degree rendered abortive by *bastard institutions*, created for the purpose of filling the pockets of *a set of adventurers*, *without education*, and *destitute of principle*. We could name several wretches who have fattened, and are still fattening, on such jobs.

Ring delivered his mind unequivocally. Walker was an imposter, and the London Vaccine Institution prospered by his frauds—

> There is a Society in this Metropolis [he wrote], falsely calling itself the Royal Jennerian Society, which has been collecting subscriptions to a considerable amount under that assumed name; and thus collecting money under false pretences.
>
> An eminent physician speaking of this Society and its successful state, called it a successful villany; and villany is not the less villany because it is successful.
>
> It has also been organising a complete system of quackery, by granting diplomas to persons totally ignorant of the first principles of the medical profession, which will add to the present host of empirics.
>
> No one can now pass along the streets without being annoyed with the inscription, VACCINATION GRATIS UNDER THE SANCTION OF THE LONDON VACCINE INSTITUTION in one pane of glass, MACASSAR OIL in a second, and PATENT BLACKING in a third. In short Vaccination is now *quite a drug*.

These were words of envy and malice, and came with odious inconsistency from the spokesman of Jenner, who had instructed and encouraged his acquaintances, male

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* *A Caution against Vaccine Swindlers and Imposters.* By John Ring. London, 1816. Pp. 140.

and female, to practise vaccination. We may, however, take Ring's evidence as to Walker's activity in London—

Dr. Walker glories in his chemical, galenical, pharmaceutical, and dentrifical inoculators; and boasts that they exceed in number those of any other vaccine institution; but he glories in his shame. *Non numerentur, sed ponderentur.* They are springing up under every pestle and mortar, and barber's pole, like mushrooms in a hot-bed, from Hyde-Park Corner to Whitechapel, and from Whitechapel to Blackwall. It is the duty of every regular practitioner to expose such imposters, and to encourage such exposure. It is, in fact, the rescuing of life from fraudulent and rapacious hands.

One of his inoculators is Mr. Campbell, who cures all sorts of incurable diseases with *Elephants' Milk.* He says he recently sent 20,000 bottles to Russia at 11s. each. He also sells the Milk in pills at 2s. 9d. a box. The poor have the Milk at half-price; and strict secresy is preserved.

In Walker's Plan for 1814, it appears that he grants his diplomas to those who *are not*, as well as to those who *are*, of the medical profession, and that Inoculators in the country are requested and *authorised* to put up a board with the following inscription, PROTECTION FROM SMALLPOX UNDER THE SANCTION OF THE LONDON VACCINE INSTITUTION. Then is to follow the name of the farrier, cobbler, barber, barber-surgeon, apothecary, man-midwife, tooth-drawer, druggist, chemist, oil-man, cheesemonger, drysalter, or grocer, who dispenses the blessing of Vaccination gratuitously.

The motley crew thus appointed are directed to make an Annual Return of the numbers inoculated by them in order to swell Dr. Walker's list; and such inoculators are not in general very nice in their calculations. Many of them will, in all probability, like other quacks, pretend to a hundred times more than they really perform.

Those who continued to believe that Vaccination was an easy and harmless operation, could see nothing but good management in the multiplication of Walker's agencies, nor anything but meanness in Ring's sneers at tradesmen. His assertion that the use of the title of the Royal Jennerian Society was fraudulent, had no justification, yet it was his persistent reproach—

Honesty is the best policy. I therefore sincerely advise Dr. Walker and his Board, to assume no more the title of the Royal Jennerian Society, to which they must know they have not the least claim, lest they should be brought before the Lord Mayor as swindlers, and be prosecuted for obtaining money under false

pretences. I am informed that they have already been compelled to refund a legacy of £100; and it is to be hoped they will be compelled to refund the rest of their ill-gotten store.

Lastly, he appealed to the members of the Jennerian Society, demanding—

How long will they suffer their names to be prostituted, and the public to be deluded by a set of swindlers and imposters; by men who are neither dignified by their rank, nor distinguished by their talents; by a set of daring adventurers and despicable upstarts! It is a gross insult and indignity, to which no man of the least sense of honour, or of shame, would submit.

But they did submit, and why not? Enthusiasm for Vaccination had passed away. It had been found out; it was everywhere distrusted; and those who held by it had to see it pushed on the same terms as any other quack prescription. What then was there to object to in Walker's procedure? The reason for Ring's libels lay in Jenner's jealousy. Walker was Jenner's abhorrence. He had joined in the conspiracy to oust Walker from the Jennerian Society in 1806, but the operation proved fatal to the Society, whilst Walker conveyed the confidence and subscriptions of the faithful to his new Institution. What wonder, then, that Jenner disliked the eccentric Quaker! Even worse; Walker accurately appraised Jenner's share in "the vaccine discovery," which came, he said, from Jenner as a hint, and was developed by Pearson and Woodville in practice—a fact that was as gall and wormwood to Jenner. Moreover, Walker had written a Jenneric Opera in which Jenner was represented as a country apothecary riding up to London on a cow, and going round a-begging among the nobility and gentry. Wherefore says Ring—

As to the calumny and detraction which Dr. Jenner and his friends have received at the hands of that desperate adventurer in his Jenneric Opera and elsewhere, they are content to bear it, provided he will not again use the language of flattery toward them; nor lavish his encomiums on them in that polluted channel, the Medical Journal. His resentment can do very little harm, which is more than can be said of his adulation.

"It is the slaver kills, and not the bite!"

Ring was an awkward champion. He sneered at Walker's diplomas certifying fitness to act as vaccinator—

> They will have the same authority [he said] and the same virtue as a diploma from the University of St. Andrews; and in all probability will in a short time be sold at the same price—

Forgetful that it was from St. Andrews that Jenner purchased his M.D.!

With equal recklessness, he denounced Walker as a vaccinator, saying—

> He tells the public in his Address that "Vaccination will shed consolation into the bosom of every family;" but alas! I have known many a family that has had reason to rue the day in which they believed him, when he told them this flattering tale. . . . It is very necessary that his followers pray that the Lord have mercy on them, if they have no other director than Dr. Walker.

Concerning the consequences of Walker's operations, Ring, no doubt, testified truly. Many continue to rue the day when they listen to the flattering tale of the vaccinator. But the testimony came strangely from a Jennerite, who was ready to swear that any abatement of smallpox in London was due to the vaccinations effected in great part by "that desperate adventurer," Walker!

Ring was implacable, the more so, perhaps, as Walker and his friends were apparently indifferent to his abuse. He burst forth afresh in the *London Medical Repository* for 1821, where among much else we find the following—

> Hanover Street, *11th October, 1821.*
>
> The mock Royal Jennerian Society is extending its impositions and depredations. The emissaries of this bastard institution, as well as the principals, should suffer transportation if there be any public spirit among us.
>
> I beg leave to add that the present Society is disclaimed by Dr. Jenner, who cautioned the Emperor of Russia against it when his Majesty was in London in 1814.
>
> In my *Caution against Vaccine Swindlers and Imposters*, published in 1816, I related several instances of the ill effects of Dr. Walker's practice, and some in which it had proved fatal. It was partly for his mal-practice, and partly for his mis-conduct,

that he was about to be expelled from the Royal Jennerian Society; and, after his artful and wicked stratagems, was permitted to resign; yet now he has the arrogance to call himself Director of that Society, and to issue his venal diplomas in its name. If Dr. Walker must imitate the universities of St. Andrews and Aberdeen, let him at least have like them *some* certificate of qualification. If he is determined *to grow rich by degrees*, let him also endeavour to grow wise and honest.

The diplomas which thus moved Ring's wrath were imposing documents, certifying that the holder was authorised to vaccinate, intended to be framed and exhibited in the shop or parlour. There was a picture of something like an arch of Waterloo Bridge with London in the background and the Royal Arms overhead; Jenner standing on a pier with a dead serpent hanging in limp folds over his arm, with the inscription, *Per omnia littora vincitur variola;* a woman milking a cow with a group of children around her, drinking milk out of porringers, as if milk were cowpox; whilst the bed of the Thames was blocked with the names of the great and good who had testified in favour of vaccination—an allegorical style of representation then much in vogue and considered impressive.

In order to create prejudice, Ring had much to say of Walker's religious and political principles. He was a Quaker of the Thomas Paine pattern, and like Paine had associated with the French revolutionists; but whilst dressing as a Friend, and associating with Friends, he was too unconformable a personality for their Society, and was never received into membership. Ring's imputations of rapacity and avarice were grossly absurd as applied to Walker. He cared for nothing beyond support in his work as vaccinator. It was said he would take a £5 note, fold it, stick a pin through it, write an address on the back, and post it. He would rarely vaccinate the well-to-do. If they came to his office, he would ask, "Who is thy medical attendant?" and wrapping up some fresh matter on glasses would say, "Take this with my compliments to thy medical attendant, and he will do what is requisite quite as well as myself." When he did

call at a house to vaccinate, he never asked for a fee, and his biographer, Dr. Epps,* observes that he was only known on one occasion to express a wish for remuneration. Meeting a merchant in St. Paul's Churchyard, whose household he had vaccinated at some inconvenience, he observed, "Friend, if thou has sent by thy servant a draft for my services to thy family, he has either robbed me or deceived thee." When money was brought to him, he usually called his wife to receive it, she having the undivided care of all that pertained to him apart from vaccination. Of this good woman, Annie, he was in the habit of speaking with an admiration and unreserve that constituted one of his numerous oddities. For example, when Dr. Moore in his *History of Vaccination* observed somewhat maliciously—

> John Walker, it is said, procured a medical diploma from the indulgent University of Leyden; and more excellent work than Walker's has rarely been performed by a humbler instrument—

Walker good-humouredly replied, that Moore as a Glasgow man naturally preferred his own University to that of Leyden, but he too had cause to love Glasgow—

> "Glasgow is a bonnie town, and there are bonnie lasses in it."
>
> There is not any other spot on the surface of the globe where I have experienced a happiness so complete as I obtained in it in 1799. Let any bachelor who cannot divine what this assertion may mean, be informed, that it was then and there I entered into marriage; and the covenant was ratified in the office of the Clerk of the Peace for the county of Lanarkshire.†

Walker was obstinate, but not vindictive. Dr. James Sims offered him £1000 in 1806 to prosecute his adversaries for conspiracy, but he left them to their devices, and proved his quality by outworking and superseding them. He replied to Moore's flippant version of the causes that led to the division and destruction of the

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* *The Life of John Walker, M.D., Graduate of the University of Leyden; Licentiate of the Royal College of Physicians of London; and late Director of the Royal Jennerian and London Vaccine Institutions.* By John Epps, M.D., London, 1831. Pp. 342.

† *John Walker's Reply to James Moore.* London, 1818. Pp. 16.

Royal Jennerian Society with perfect self-control and manifest truthfulness, but at the same time with a simplicity not of this world.* Jenner's spite, Ring's abuse, and the sneers of the superfine did him little harm; and, if vaccination were beneficial, I should have nothing but praise for the good people, who, recognising the sincerity of his work, disregarded trivialities of manner, and supported him loyally as a faithful servant.

Walker was nothing but a vaccinator. Day after day, in rain or sunshine, his lank figure, and self-complacent visage under a white broad-brimmed hat were to be seen making the round of the vaccine stations. When he entered a room, he first glanced at the table on which he expected to find his books. If any mothers had placed their children's bonnets or garments thereon, they were at once swept off. He then ranged the company in order against the wall like a schoolmaster, and delivered a short address on the protection he was about to confer. The children's names were taken down with a preliminary caution to speak distinctly. When women muttered or gabbled, the Doctor grew irritable, and would sometimes make a troublesome woman spell her infant's name half-a-dozen times, adding, "Now thou wilt know how to speak plainly." Having got the names, he had next to look out for virus. The few mothers who had ventured to return with their vaccinated babes for examination, would perhaps lose courage and attempt to escape, when Walker would dart to the door and arrest the fugitive, saying, "Thou foolish woman! If thou wilt not do good to others, I will bless thy little one," and would proceed to gather what he called his "Vaccine Roses." He pursued his operations calmly indifferent to the screams of the children and the complaints of the mothers, and as he disposed of each case pronounced the illusory benediction, "Thy child is safe: fear not: fare thee well."

* *John Walker's Reply to James Moore on his Mis-Statements respecting the Vaccine Establishments in the Metropolis and their Officers and Servants both Living and Dead.* London, 1818. Pp. 114.

Walker died in 1830, aged seventy-one, after a short illness, in which "he refused to take any medicine though himself a physician." In the Report of the London Vaccine Institution for 1831 we read—

> He was a man who day after day, month after month, and year after year, watched with the care of a parent the cause of which he was so experienced an advocate; who was willing to know nothing but the object of his early love, Vaccination; who for upwards of a quarter of a century never omitted one lawful day going his rounds to the numerous stations of the Institution; and who, it may be almost said, ended his life with the lancet in his hand, for he went round to the stations two days before he died.

Toward the end of his life, he used to boast that he had performed upwards of one hundred thousand vaccinations. So far as vaccination prevailed in London, it was chiefly through Walker's exertions; and he was just the character, being set going, to keep going whatever the adverse evidence or obloquy. He had his plans and his methods, and those who tried to modify them took nothing by their pains. He was a man to have his own way, and those who did not like him might leave him. Whether from incapacity or affectation, he made no attempt at politeness, and said precisely what he thought without accommodation. He was a piece of mechanism rather than of genial humanity.

CHAPTER XXV.

JENNER'S LATER WRITINGS.

JENNER'S later writings were chiefly apologies for the failures of vaccination. His position was one of much difficulty, and its peculiarity is rarely, if ever, recognised. For example, how few know that his *Inquiry* published in 1798, "that master-piece of medical induction," according to Mr. John Simon, was kept out of print and referred to as rarely as possible after 1801-2.

"Why?"

The answer to the question is so important that at the risk of repetition I give it explicitly.

The *Inquiry* was suppressed because of its ascription of cowpox to horsegrease.

It was the belief of dairy-maids in Gloucestershire that to have had cowpox was to be secure from smallpox. Jenner was much impressed by the rustic superstition, and brought it so persistently before his medical brethren at their convivial assemblies, that they threatened to expel him if he bored them any longer with the subject. "It is true," they said, "that the maids believe an attack of cowpox keeps off smallpox, but we know they are wrong; for we are all familiar with cases of smallpox after cowpox."

Thus frustrated, Jenner's ingenuity took another turn. It was the belief of farriers that if infected in dressing horses' greasy heels, they too were secure from smallpox. The area of this conviction was narrower than that of the dairy-maids, farriers being neither so numerous, nor so observant of their beauty: but Jenner entertained their faith and converted it to his purpose.

Horsegrease protected from smallpox, if cowpox did not. But might there not be one sort of cowpox that answered to the dairy-maids' faith, if another sort did not? Happy thought! The defensive sort was derived from the horsegrease which protected the farriers: the non-defensive originated spontaneously on the cows. Men, fresh from handling horses' greasy heels, milked cows and communicated to them the horses' disease. Milkmaids, who in turn contracted from the cows that sort of pox, were like the farriers secure from smallpox, yea securer; whilst milkmaids who contracted pox spontaneously developed on cows were not secure. The milkmaids' superstition was therefore justifiable: they were right and they were wrong—right when they got pox through the cow from the horse; wrong when they got pox from the cow simply.

Why then, it may be asked, did not Jenner dismiss the cow from consideration? Why did he not base his

prescription on the farriers' experience, and use and recommend horsegrease exclusively for inoculation? The question is an obvious one, but it is not easy to make out Jenner's answer with precision. His assertion was, that—

> The virus from the horse is not to be relied upon as rendering the system secure from variolous infection, but the matter produced by it on the nipple of the cow is perfectly so—

which was to say that horsegrease attained its highest prophylaxy after transmission through the cow.

Such was the doctrine of the *Inquiry*, "that masterpiece of medical induction."

When the doctrine came to be reduced to practice, difficulties arose. Cowpox was considered wholesome and credible, whilst horsegrease was repulsive and incredible. Still fact was fact; and many were ready to accept horsegrease through the cow, or without the cow, if such indeed were the source of the new salvation. Cowpox proved to be a rare commodity, whilst horsegrease was common, and numerous attempts were made to produce cowpox by means of grease, but ineffectually. At some attempts, Jenner officiated. Marshall records that—

> Mr. Sewell, Assistant Professor at the Royal Veterinary College, informs me that he was a witness to a series of experiments, twice repeated, at the College in the presence of Dr. Jenner, Dr. Woodville, Mr. Wachsel, and Mr. Turner, with a view to produce the vaccine disease on the teats of a cow. The matter of grease had been immediately taken from the horse, and variously applied by long continued friction, punctures, scarifications, and by scratching the surface with a needle; but from these trials neither inflammation, nor any affection resembling a pock resulted.*

To this discomfiture Jenner had to submit. His ascription of cowpox to horsegrease was stigmatised as an error of which the less that was said the better. It is true that other experimenters were more successful, and that

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* *A Popular Summary of Vaccination with reference to its Efficacy and Probable Cause of Failure.* By John Marshall, M.R.C.S. and District Vaccinator of the National Vaccine Establishment. London, 1830. Pp. 96.

Loy of Whitby and Sacco of Milan dispensed with the cow as a superfluity and used matter direct from the horse for inoculation, passing the virus from arm to arm into general circulation until what was equine was lost sight of and indistinguishable from what was vaccine; but Jenner did not care to be justified at the risk of his popularity and the money on which he had set his heart. He saw how the wind of public favour was blowing, and went with it. Since horsegrease was disliked, he consented to its oblivion. Pearson, the chief promoter and organiser of vaccination, scoffed at horsegrease, and used spontaneous cowpox, which Jenner knew was of no avail against smallpox; but he entered no protest upon that score. On the contrary, he let the futile practice go on; he claimed it as his own; and he set about manufacturing excuses for the failures which were imminent.

Spurious cowpox was one of the most dexterous of these excuses. If injury or smallpox followed vaccination, the disaster was ascribed to spurious cowpox. Jenner's *Further Observations*, published in 1799, was designed to teach "how to distinguish with accuracy between that peculiar pustule which is the *true* Cow Pock and that which is *spurious;*" and in his *Origin of the Vaccine Inoculation* in 1801 even greater stress was laid on the distinction. By and bye, however, the excuse worked more harm than advantage. People got terrified with the mischiefs ascribed to spurious cowpox, and as which was genuine and which spurious was only discoverable in their consequences, they began to decline to have either. It then became expedient to deny spurious cowpox, which Jenner did. He confessed to the Royal College of Physicians that there was not a true and a false cowpox; and that by spurious cowpox he "meant nothing more than to express irregularity in the form and progress of the vaccine pustule from which its efficacy is inferred."

In view of facts like these, there is little cause for surprise that the publication of Jenner's *Inquiry* with its two supplements was not continued. What he set forth

as essential was treated as illusory, whilst the cowpox in which he had taught there was no security had been brought into use everywhere. Why therefore embarrass himself with proclamations of his own blunders? The believers in vaccination were good-natured and incurious, and he had their homage, which was agreeable and profitable, and why should he dissipate it? The *Inquiry* was printed for the third time in 1801, but "this masterpiece of medical induction" has never been republished; and the probability is, that if ever reproduced, it will be to prove to the world the emptiness of its author's pretensions.

Jenner's original promises of immunity from smallpox by inoculation with horsegrease cowpox were absolute. Thus he wrote—

> The person who has been affected with Cowpox Virus is for ever after secure from the infection of the Smallpox.*
>
> It clearly appears that this disease, Cowpox, leaves the constitution in a state of perfect security from the infection of the Smallpox. †
>
> Cowpox admits of being inoculated on the human frame with the most perfect ease and safety, and is attended with the singularly beneficial effect of rendering through life the person so inoculated perfectly secure from the infection of the Smallpox.‡

Experience was not slow to demonstrate the futility of these assurances. At first the facts were flatly denied: it was impossible for smallpox to succeed cowpox. The evidence, however, grew too strong to be outsworn, and then it was said the cowpox must have been spurious. As failures accumulated over the operations of Jenner himself and his choice disciples (who were naturally presumed to know and avoid spurious cowpox) they began to lay great stress on the fact that smallpox itself did not always avert a subsequent attack; and if smallpox did not save from smallpox, why, they demanded, should cowpox be expected to do more?§ Why, indeed! Still

* *Inquiry*, 1798, p. 7. † *Ibid.*, p. 58.

‡ *Petition to the House of Commons*, 1802.

§ Jenner to Dunning, 23rd Dec., 1804. Baron's *Life of Jenner*, vol. ii. p. 26.

the cases of smallpox after cowpox were as scores to those of smallpox after smallpox, and then the argument was reduced to a competition between variolation and vaccination. "You inoculators with smallpox," said the vaccinators, "are continually having smallpox after variolation, and why should we be expected to be more successful?" Why, indeed! The inoculators with smallpox in turn denied that after efficient variolation smallpox ever occurred, or could possibly occur; and thus the wrangle went on. One thing was plain and certain —the original claim of Jenner for the absolute infallibility of Horsegrease Cowpox as a preventive of Smallpox was reduced and surrendered bit by bit until it came to this at last—it made Smallpox milder!

These repeated surrenders were, however, never ingenuous. Mistakes are inevitable, and they are forgiven when frankly confessed; but frank confession was not Jenner's habit. When vaccination failures had become notorious in 1808, he had the hardihood to assert, that from the outset he had recognised that as smallpox did not always avert smallpox, neither did he expect cowpox to do so; and cited as proof of his prescience this passage from *Further Observations* in 1799—

> It should be remembered that the constitution cannot, by previous infection, be rendered *totally* insusceptible of the variolous poison; neither the casual, nor the inoculated Smallpox, whether it produce the disease in a mild or violent way, can *perfectly* extinguish the susceptibility.*

Here Jenner made a bold draft on his reader's ignorance. It was his claim for horsegrease cowpox that it conferred an absolute security from smallpox without any qualification whatever. The assumed prescience in 1799 is completely belied when we refer to his arrogant manifesto of 1801. These are his words—

> The scepticism that appeared amongst the most enlightened of medical men, when my sentiments on Cowpox were first promulgated, was highly laudable. To have admitted the truth

* *Facts for the most part unobserved, or not duly noticed respecting Variolous Contagion.* London, 1808, 4to, pp. 17.

of a doctrine, at once so novel *and so unlike anything that ever appeared in the Annals of Medicine*, without the test of the most rigid scrutiny, would have bordered upon temerity; but now, when the scrutiny has taken place, not only among ourselves, but in the first professional circles in Europe, and when it has been uniformly found in such abundant instances, that *the human frame, when once it has felt the influence of the genuine Cowpox* in the way that has been described, *is never afterwards*, at any period of its existence, *assailable by the Smallpox*, may I not with perfect confidence congratulate my country and society at large on their beholding, in the mild form of Cowpox, an antidote that is capable of extirpating from the earth a disease that is every hour devouring its victims; a disease that has ever been considered as the severest scourge of the human race! *

Cowpox was thus set forth as a prophylactic with powers hitherto unknown and unique; so that Jenner was cut off from the claim of its equivalence with smallpox in character and consequences. He knew in 1799, as we have seen, that infection with smallpox did not render the constitution proof against the subsequent influence of the disease; but in 1801, as we see, it was his express contention that what smallpox failed to do *that* cowpox did—it protected the constitution perfectly and for ever from smallpox, and nothing to compare with it had ever appeared in the Annals of Medicine. It was only under the pressure of exposure and defeat that he humbled himself to write to Dunning, 1st March, 1806—

> The security given to the constitution by Vaccine Inoculation is *exactly equal* to that given by the Variolous. To expect more from it would be wrong. As failures in the latter are constantly presenting themselves, we must expect to find them in the former also. †

To this pass was the infallible preservative from smallpox, with nothing to match it in the Annals of Medicine, reduced within the experience of seven years!

The most thorough-going and far-reaching of Jenner's

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* *A Continuation of Facts and Observations relative to Cowpox.* By Edward Jenner, M.D. London, 1801.

† Baron's *Life of Jenner*, vol. ii. p. 28.

excuses for vaccination failures were herpetic affections of the skin. In his journal we read—

Inoculated C. F. a second time. It is very evident that the affection of the skin called red gum deadens the effect of the Vaccine Virus. This infant was covered with it when inoculated four days ago. The same happened with Mrs. D.'s infant.*

To Mr. Dunning he wrote from Cheltenham, October 25th, 1804—

How frequently does the Vaccine Disease become entangled with herpes! I see that the herpetic fluid is one of those morbid poisons which the human body generates, and when generated, that it may be perpetuated by contact. Children who feed on trash at this season of the year are apt to get distended bellies, and on them it often appears about the lips. This is the most familiar example that I know. *A single vesicle is capable of deranging the action of the vaccine pustule.* Subdue it, and all goes on correctly.†

And again to the same correspondent, 23rd December, 1804—

My opinion is that the chief interference with the success of Vaccination is herpes in some form or another. I have discovered that it is a very Proteus, assuming as it thinks fit the character of the greater part of the irritative eruptions that assail us. ‡

Having thus detected an all-sufficient explanation of the failure of vaccination to prevent smallpox, he communicated his discovery to the *Medical and Physical Journal*, August, 1804, in a paper entitled, "On the Varieties and Modifications of the Vaccine Pustule occasioned by an Herpetic State of the Skin," but he complained to Dunning "that it seemed not to have excited the slightest interest." In order to call attention afresh to the subject, he had the article reprinted as a pamphlet at Cheltenham in 1806 and at Gloucester in 1819, but in vain. He complained to Baron in 1817 that he could not get the Board of the National Vaccine Establishment to attend to his cautions touching the interference of cutaneous diseases with the progress of the vaccine vesicle. "I am afraid," he observed, "that the

* Baron's *Life of Jenner*, vol i. p. 449. † *Ibid.*, vol. ii. p. 344.
‡ *Ibid.*, vol. ii. p. 26.

extreme ignorance of medical men on this subject will destroy the advantages which the world ought to derive from the practice."*

What of course medical men with the least common sense perceived was, that the excuse provided for vaccination failures was too liberal to be worth anything. If the least cutaneous eruption was sufficient to frustrate vaccination, what operation could be pronounced efficient? for it could scarcely be intended that every patient should be stripped to the skin and minutely examined for herpetic vesicles. There was nothing transitory in Jenner's opinion about herpes: he harped upon its mischiefs and omnipresence to the close of his life. William Dillwyn of Walthamstow having asked him for any observations that occurred to him on the practice of vaccination for the benefit of Friends in Philadelphia, Jenner replied in a letter dated Berkeley, 19th August, 1818, in which we find these remarks—

I must candidly acknowledge that I am not at all surprised that a partial prejudice should now and then lift up its head against Vaccination. It is called into existence, not from anything faulty in the principle, but from its wrong and injudicious application. For example, a child, or a family of children, may be in such a state, that the action of the vaccine fluid when applied to the skin shall be either wholly or partially resisted. It may either produce no effect at all, or it may produce pustules varying considerably in their rise, progress and general appearance from those which have been designated *correct*. It was about the year 1804 that I was fortunate enough to discover the general cause of these deviations, and no sooner was it fully impressed on my mind, than I published it to the world. Yet few, very few indeed, among those who vaccinate, have paid any attention to it; yet I am confident, from the review of the practice on an immense scale, that it is a matter which has a greater claim on our attention than any one thing besides connected with Vaccination—indeed I may say than any other thing. What I allude to is a coincident eruptive state of the skin, principally bearing what we call the herpetic or eruptive character. If we vaccinate a child under its influence, we are apt to create confusion. The pustule will participate in the character of the herpetic blotch, and the two thus become blended, forming an appearance that is neither vaccine nor herpetic; but the worst

* *Life of Jenner*, vol. ii. p. 223.

of it is that the patient does not receive that *perfect* security from Smallpox infection which is given by the perfect pustule.*

These complaints of the indifference of the medical world to his prophesying, show how completely the business of vaccination had passed out of Jenner's hands. The influence of herpes on vaccination, although declared by him to be of the utmost importance, even to the extent of imperilling the advantages of the practice, was disregarded as unworthy of serious attention.

Another of Jenner's apologetics was a pamphlet in 1808 † designed to explain away the failure of the variolous test—the test that deceived so many in the early days of vaccination. The inoculated with cowpox were inoculated with smallpox, and when the smallpox did not "take," it was said, "Behold the perfect protection!" The smallpox inoculators complained bitterly of the hocus-pocus. "No wonder," they said, "that when the system is in a fever with bestial corruption, that human pox will not 'take,' but try after awhile." And they did try after awhile, and it was found that the vaccinated could be inoculated with smallpox like the unvaccinated. Indeed, when it was seen that the vaccinated fell victims to smallpox, many who had been vaccinated resorted to the smallpox inoculators for their supposed superior protection, and received it without hindrance from their previous vaccination. It therefore became judicious to disown the variolous test; but neither in this case was the surrender frankly made, but with prevarication that deprived it of all grace. What the smallpox inoculators maintained, Jenner had to allow, but after this fashion—

My principal object is to guard those who may think fit to inoculate with variolous matter after Vaccination from unnecessary alarms; a pustule may sometimes be thus excited, as on those who have previously gone through Smallpox; febrile action in the constitution may follow; and, as has been exemplified, a slight eruption.

* *Letter from Dr. Edward Jenner to William Dillwyn, Esq., on the Effects of Vaccination in Preserving from the Smallpox.* Philadelphia Vaccine Society. Philadelphia, 1818. Pp. 20.

† *Facts for the most part unobserved, or not duly noticed, respecting Variolous Contagion.* London, 1808. 4to, pp. 17.

For the variolous he recommended the substitution of the vaccine test; saying—

> At the commencement of Vaccination, I deemed the Variolous Test necessary; but I now feel confident that we have one of equal efficacy, and infinitely less hazardous in the re-insertion of the vaccine lymph—

Which was to say that vaccination immediately after vaccination would be found impossible—the later practice of periodical re-vaccination being unforeseen.

Jenner might have perceived that after his proclamation of the influence of herpes on vaccination, there was nothing to be said for the variolous test. When he consented to run vaccination on the same terms as variolation, and admitted that it would be wrong to expect more from the one practice than from the other, he was bound in consistency to allow that if vaccination was frustrated by eruptions of the skin, it was matter of consequence that variolation should be frustrated by the fever of vaccination. He informed Dillwyn that he destroyed cutaneous eruptions by the application of *unguentum hydrargyri nitrati*, and then vaccinated with success. The smallpox inoculators did so likewise. When the irritation induced by vaccination had had time to subside, they too variolated with success.

The letter to Dillwyn, 1818, contains some other points which it is instructive to note. For example, the following passage proves two things, first, how notorious had become vaccination failures; and, second, how vaccination, from an easy art that any one might practise, had been converted into a mystery to which even "an eminent surgeon" might be unequal. Jenner says—

> One word more with respect to prejudice. How frequently have we seen in the public prints paragraphs of this description—"A gentleman's family, consisting of three or four or half-a-dozen children, were vaccinated by an eminent surgeon, and all went through the disease in the most satisfactory manner, and were pronounced safe; yet, on being exposed to the infection of the Smallpox, they all had the disease, but happily they all recovered." Here, Sir, the mind becomes entangled with a false association. The public conceive that *an eminent surgeon* must be a perfect

master of this little branch of our art; but it often happens that he has not stooped to look at anything beyond its outline; and when deviations arise in the progress of the pustules [as from herpes] to that extent which I have pointed out as momentous, they are passed by without attracting any particular attention.

A report having got abroad that Jenner had renounced his faith in vaccination, he replied to Dillwyn—

My confidence in the efficacy of Vaccination to guard the constitution from Smallpox is not in the least diminished. That exceptions to the rule have appeared, and that they will appear, I am ready to admit. They have happened after Smallpox Inoculation; and by the same rule, as the two diseases are so similar, they will also happen after Vaccine Inoculation.

In presence of such a declaration, it is easy to understand why the *Inquiry* with its supplements was kept out of print, and never referred to. His confidence in vaccination not in the least diminished! In the words cited, he surrendered afresh the claim with which he started, and for which he was paid, namely, that inoculation with cowpox rendered the constitution proof against smallpox for life, and that the protection thus afforded was without precedent in medical experience.

Having thus, under stress of necessity, reduced vaccination to the level of variolation, and tried to shelter the failures of the one practice under those of the other, the spirit of the old quack surviving, he went on to prophesy in the familiar strain—

It is a curious and most delightful fact that Smallpox is flying before Vaccination in all directions. In a wide district around me, embracing the most populous part of the county of Gloucester, the Smallpox is scarcely heard of; and if it does happen to appear from infection brought by the wandering pauper, it either finds itself insulated, or is rendered incapable of spreading by giving immediately the vaccine security to those within its atmosphere who may happen to remain unprotected.

With Jenner's turn for romance, there is no need for dealing with a statement like the foregoing seriously, else we might ask what was the prevalence of smallpox in Gloucestershire before vaccination? and to what extent had it been cultivated by inoculators? Throughout England there was a remarkable subsidence of smallpox

precedent to the introduction of vaccination (for which vaccination obtained the credit), which subsidence was no doubt accelerated by the cessation of variolation. Jenner resumes —

Wherever Vaccination has been *universally* practised, there the Smallpox ceases to exist. It matters not how wide the district, or how populous the city, the result is, and, from the nature of things, must be the same. There is scarcely a part of the civilised world that cannot bear testimony to the truth of this position. For extent of territory, we may turn our eyes to our possessions in the East, and to various parts of South America; and to towns and cities, many of the most conspicuous in Europe.

In the island of Ceylon, the ravages of Smallpox were dreadful, although many efforts had been made to lessen its fatality by Variolous Inoculation. This, wherever it was practised, produced a spreading of the disease, and made a bad matter worse; so that the people would have nothing to do with it. But after a little time they took to Vaccine Inoculation very readily, and Smallpox became totally extinct.

From Sweden, too, we have a report that proves the extinction of Smallpox throughout the kingdom. Now as the good sense of the Swedes brought about this happy event, why should not Britain avail herself of the great gift, and employ it to the same effect? Here the Boon is distributed with a partial and a sparing hand, and consequently Smallpox still exists in several parts of our island.

There was no checking Jenner when he rose into rhodomontade about the myriads of Asia and the vastness of America, but descending to the definite in Ceylon and Sweden we can test him with precision, and as to both we shall find his statements at wide variance with facts. For the present, however, let us keep to our own country, and note especially what he had to assert of London in 1818—

Nevertheless I have the happiness to say, that since the first promulgation of my discovery in 1798, the deaths of Smallpox in the British Realms, according to the best estimates I can form, are reduced from more than 40,000 to less than 6,000 annually. The metropolis for the last ten or twelve years exhibited a reduction of about one half only; but during the last two years, Vaccination has been more extensively practised than ever, both from the benevolence of private individuals and the faculty, and by public institutions; and this year, 1818, promises a far greater reduction in the number of deaths than any that has preceded it.

In London in 1818 the deaths from smallpox were low (421); but a single year is of little account, and must be viewed in relation to preceding years. Here we have a statement for the decade, 1811-20, taken from the metropolitan Bills of Mortality.

Years.	Burials from all diseases.	From Smallpox.	From Fevers.	From Measles.
1811	17,043	751	906	235
1812	18,295	1287	783	427
1813	17,322	898	714	550
1814	19,783	638	908	817
1815	19,560	725	1309	711
1816	20,316	653	1299	1106
1817	19,968	1051	1299	725
1818	19,705	421	1170	728
1819	19,228	712	1150	695
1820	19,348	792	1156	720
	190,568	7928	10,694	6714
1801-1810	185,737	12,534	16,204	5680
1791-1800	196,801	18,477	19,880	2707

From this statement we see that the decrease in London smallpox that set in toward the close of the 18th Century was maintained; but that vaccination had aught to do with the decrease there is no reason to believe—unless in so far as the new practice discouraged variolation. How, we ask, could the vaccination of one-tenth of the Londoners (if so many) reduce the smallpox among nine-tenths? We have also to observe that mortality from fevers abated in common with smallpox; and it cannot be pretended that that abatement was also due to vaccination! The rational assumption is, that what diminished fevers in London, likewise diminished smallpox. Nor should we overlook the fact, that as the deaths from smallpox declined, those from measles increased; nor the probability that many deaths formerly ascribed to smallpox were derived from measles, and that part of the decline in one column is accounted for by the increase in the other.

Jenner's assertion, that the national mortality from smallpox had been reduced from more than 40,000 to

less than 6000 annually, had no basis whatever in reality. As we know, the 40,000 deaths were got by multiplying the deaths of a bad year of London smallpox by the population of the United Kingdom—as if London were the standard of England, Ireland, and Scotland! How he obtained the reduced number of 6000 we are left to conjecture. In reviewing Jenner's writings we are startled with his inconsistencies, and scarcely less with the carelessness and credulity of his adherents. He set out with the common knowledge that cowpox did *not* prevent smallpox, and for that reason he substituted pox generated by horsegrease on the cow. Horsegrease cowpox could not, however, be procured on demand; and was, moreover, disliked on the score of its origin; and cowpox was resorted to by Pearson and Woodville, and diffused everywhere with acclamation; and Jenner did not only not object, but took credit, and actually was allowed to take credit for the pox he had described as ineffective for the purpose designed! By and bye cowpox from horsegrease, or horsepox, according to the original recipe, was obtained and brought into circulation with Jenner's sympathy, if without his open approval—he discerning that praise and pay were not to be had from that notion. After a while, horsegrease, or horsepox, was used for inoculation without the intervention of the cow; and that too entered into currency as vaccine, Jenner himself employing and distributing it, although according to his *Inquiry* it was not to be trusted to prevent smallpox.

I repeat these facts, even at the risk of tedium, because it is essential to have them clearly apprehended. For at least three descriptions of virus Jenner stood responsible, namely—

I.—Horsegrease Cowpox—the virus warranted in his *Inquiry*.

II.—Cowpox, known by Jenner to be ineffective in preventing smallpox, but favoured by the medical profession and the public.

III.—Horsegrease (said to have been horsepox), also

described by Jenner as ineffective, but latterly used and diffused by him.

To which of these did he attribute the success claimed for vaccination? Apparently to all indifferently; but if one were as good as the others, why did he not say so, and proceed to explain how it was that cowpox did not save the Gloucestershire milk-maids, nor horsegrease the farriers from smallpox? Was it that the power to put such questions, and to answer them, does not consist with the quack's intelligence; and that in his lucre he rests content? Observe, too, how when credit was to be had for London vaccination, Jenner took it, though at mortal enmity with the chief agent in the work, repudiating Walker's practice as subversive of principles he considered essential to success.

Jenner's final publication in 1822 had nothing to do with vaccination, but was a bid for fame in a new direction.* It was an attempt to originate a new method of cure by irritating the skin with tartarated antimony. He had dabbled with the chemical when a young man, and John Hunter had suggested that his preparation should be sold and puffed as Jenner's Tartar Emetic. In his last years he returned to it, and produced a series of cases to prove how many diseases might be alleviated and removed by using it as a counter-irritant—just as in the *Inquiry* he recommended cowpox inoculation with the same intention. The matter does not concern us further than to observe that the vesicles and scars produced by tartarated antimony are almost indistinguishable from those of vaccination; and that Hufeland, the German Nestor of Medicine, taught and proved that tartar emetic was every whit as effective against smallpox as cowpox—an opinion from which I see no reason to dissent.

* *A Letter to Charles Henry Parry, M.D., on the Influence of Artificial Eruptions in certain diseases incidental to the Human Body; with an Inquiry respecting the probable advantages to be derived from further experiments.* By Edward Jenner, M.D., LL.D., F.R.S., M.N.I.F., etc., and Physician to the King. London, 1822. 4to, pp. 68.

CHAPTER XXVI.

BARON'S LIFE OF JENNER.

We owe much to Baron's Life of Jenner, but as a collection of evidence rather than as an organic biography. It is verbose and loosely put together, and would never be read unless by some one in quest of information, or with nothing better to do. Fortunately Baron was reverent and not critical. Jenner was to him a sacred being, admirable in all relations, whose only contention was with "the blindness and wickedness of his traducers." Lives written in this temper are often most instructive. Tales are told and letters produced in pious simplicity that biographers of the judicious order discreetly suppress.

Baron made Jenner's acquaintance in the summer of 1808 when he was living at Fladong's Hotel, Oxford Street, revelling in a fool's paradise as to his importance in the formation of the National Vaccine Establishment. Baron had recently come from Edinburgh, and says,—

I was about to commence practice: all the world was before me. In seeking the acquaintance of Jenner I was impelled mainly by a desire to do homage to a man whose public and private character had already secured my warmest admiration. I little thought that it would so speedily lead to an intimacy, and ultimately to a friendship, which terminated only at his death, and placed me in a relationship to his memory that no one could have anticipated. The greatness of his fame, his exalted talents, and the honours heaped upon him by all the most distinguished public bodies of the civilised world, while they made me desirous of offering my tribute of respect to him, forbade the expectation of more than such an acknowledgment as a youth, circumstanced as I was, might have expected. I soon, however, perceived that I had to do with an individual who did not square his manners by the cold formality of the world. He condescended as to an equal; the restraint and embarrassment that might naturally have been felt in the presence of one so eminent vanished in an instant. The simple dignity of his aspect, the kind and familiar tone of his language, and the perfect sincerity and good faith manifested in all he said and did,

could not fail to win the heart of anyone not insensible to such qualities. Though more than twenty years have elapsed since this interview took place, I remember it, and all its accompaniments, with the most perfect accuracy. He was dressed in a blue coat, white waistcoat, nankeen breeches, and white stockings. All the tables in his apartment were covered with letters and papers on the subject of vaccination, and the establishment of the National Vaccine Institution. He talked to me of the excellent article which had lately appeared in the *Edinburgh Review*, relative to the vaccine controversy. He spoke with great good humour also of the conduct of the anti-vaccinists, and gave me some pamphlets illustrative of the controversy then going on. The day before he had had an interview with the Princess of Wales, and he showed me a watch which her Royal Highness had presented to him on that occasion.*

The passage is a long one, but it has some value in itself, and exhibits Baron's habitual attitude toward his hero. In his private relations, Jenner was amiable, but it is with his public life that we are concerned, and find so reprehensible. Mischievous leaders and teachers are frequently distinguished by private graces; and austere personal virtue is frequently associated with bland indifference to conventional immoralities; and we need not go far to discover counterparts of Jenner in ordinary life. Nothing is commoner than sauvity combined with self-love that is malignant and mendacious when thwarted. All is pleasant as long as admiration prevails, but with dissent or resistance the sunny temper vanishes, and clouds of contempt and fury overspread the spiritual sky. A sharp test of character is a man's disposition to his adversaries; and Jenner was never magnanimous. His conduct to Pearson, Woodville, and Walker has been sufficiently described; and similar jealousy and spitefulness were displayed to whoever dared to impugn his infallibility in the prevention of smallpox. No one, for instance, could have brought forward the fact that smallpox occasionally succeeded vaccination with more simple good faith than Goldson; yet Jenner wrote of him with insufferable insolence—an insolence that is thrown into stronger relief by the know-

* Vol. ii. p. 136.

ledge that what Goldson testified is accepted at this day, even by vaccinators, as indisputable matter-of-course. His bully, too, John Ring, attacked Goldson, and Jenner, in writing to Dunning, 23rd December, 1804, thus excused his brutality—

> You speak of Ring and Goldson. Recollect there was not time to be cool. What lover of Vaccination—what man, well acquainted with its nature, and that of Smallpox, could read Goldson's book, and lay it down coolly? Ring, the moment he read it, and what indeed was infinitely worse than the book itself, its murderous harbinger—the advertisement, instantly charged his blunderbuss, and fired it in the face of the author. I must freely confess, I do not feel so cool about this Mr. Goldson as you do. His book has sent many a victim to a premature grave; and would have sent many more, but for the humanity and zeal of yourself and others who stepped forward to counteract its dreadful tendency.*

In the same spirit he wrote to Baron, 6th November, 1810, of Brown of Musselburgh, who had reported certain cases of smallpox after vaccination in a London newspaper—

> Some notice must be taken of Mr. Brown's communication; but if he thinks he shall be able to draw me into controversy, he will be mistaken. His letter, under the veil of candour and liberality, is full of fraud and artifice; for he knows that every insinuation and argument he has advanced, have been refuted by the first medical characters in Edinburgh and Dublin. But the mild, gentle, complaisant antagonist, is a character more difficult to deal with than one who boldly shows his ferocity.†

As applied to Brown, sagacious and sincere, this was the very ecstasy of abuse. Even Brown's adversaries within his own neighbourhood, ultimately yielded to his contention. In the *Edinburgh Medical and Surgical Journal* of July, 1818, we read—

> Before we conclude, we must in justice to ourselves pay the *amende honorable* to Mr. Brown of Musselburgh, whose opinions we strenuously controverted in 1809; and to which we now, in 1818, confess ourselves partly converts in consequence of increased experience and observation.

In short, calm discussion of vaccination with Jenner was never possible. Inquiry was borne down with

* Vol. ii. p. 24. † *Ibid.* p. 47.

clamour, and scepticism denounced as malevolence. "He could not altogether escape," says Baron, "from the annoyance occasioned by *the blindness and wickedness* of his traducers" *—and all were traducers who were not believers. Indeed, Baron could only account for the perversity of those who did not recognise Jenner as the saviour of mankind from smallpox by a resort to the doctrine of inbred depravity, saying—

> We are compelled to believe that there is a principle in our nature which has too strong an affinity for what is untrue to permit the understanding to discern or acknowledge an opposite principle till both the moral and intellectual vision has been purified and strengthened.†

Purified and strengthened, and the affinity with falsehood dissolved, it became possible for the understanding to appreciate the virtue of cowpox and the veracity of its advertiser!

Jenner, it may be said, instinctively resented investigation. He was uneasy in conscious duplicity. He knew there was no safety in vaccination as practised; for the cowpox employed was not the horsegrease cowpox he had commended as efficacious. What he had prescribed was disregarded; what he had condemned was approved; but, strange to say, he was praised and rewarded by the world as if cowpox had been his specific! Jenner accepted the situation, and possibly came to believe (after a fashion) that he was enjoying no more than his own; but under the circumstances it was not surprising that he shrank from criticism, kept his early publications out of the way, and resorted to scolding and shrieking whenever scrutiny appeared imminent.

Worse even than his behaviour to investigators and opponents was his treatment of those who converted vaccination to practice. The *Inquiry* was no handbook, and Pearson, Woodville, and other early vaccinators, had to make their own way, not only unassisted, but with Jenner ready to appropriate their successes and to re-

* Vol. ii. p. 148. † Vol. ii. p. 110.

proach them with their failures. Baron avers that nothing in the art of vaccination was due to any one but Jenner himself, qualifying this praise with a slight exception in favour of Dr. Bryce of Edinburgh, who made the discovery that if a subject under vaccination is re-vaccinated, the subsequent inoculation is caught up and brought to maturity with the precedent—a phenomenon that as Bryce's Test was used to ascertain whether true vaccine fever was operative. But even Bryce received scant acknowledgment, and Baron tries to make out that Jenner was possessed of the fact ere it was announced.* Jenner's meanness toward those who displayed any intelligent independence in co-operation with him is written at large in Baron's biography, but with such innocence that it would be absurd to describe it as indecent. His good faith is perfect, and it is only a critical reader that finds out how he is identified with Jenner, seeing merit nowhere save in his abject servitors and feminine *claque*.

Vaccinators at this day allow that the influence of vaccination wears out and ought to be renewed; yet Jenner would not listen for a moment to such a modification of its perpetual prophylaxy. Baron writes—

> The year 1804, in Jenner's estimation, formed an era in the history of the Variolæ Vaccinæ. The assertion, that the Cowpox afforded only a temporary security was then insisted on. Had it been correct, it would have deprived the discovery of nearly all its value. This assertion was very easily made; and in the infancy of the practice could not be well disproved. To these circumstances it was owing, that the crude and unsupported statements of Mr. Goldson acquired any influence. Dr. Jenner himself, from the commencement, perceived that in his cases of failure, Cowpox had never been properly taken. †

When in 1813 Lord Boringdon introduced his bill to Parliament for the restriction of variolation, Lord Ellenborough observed—

> No doubt Vaccination is of some use, but if the noble lord considers it a complete preventive of Smallpox, I differ from him in

* Vol. i. p. 450. † Vol. ii. p. 18.

opinion. At the same time, I have proved my respect for the discovery by having my eight children vaccinated. I believe in the efficacy of Vaccination to a certain extent. It may prevent the disorder for eight or nine years; and in a large city like this with a large family of children, even this limited protection is desirable.

In this declaration the Chief Justice was not singular, but expressed the general conviction of the public who held by vaccination in spite of the manifest failure of the early promises made for it. Nevertheless Jenner was extremely annoyed: it was to him as the formal deliverance of judgment. Baron says—

I have seldom seen Jenner more disturbed than he was by this occurrence; not certainly because he had any fears that the unsupported assertion of his lordship would prove correct, but because it unhappily accorded with popular prejudices, and when uttered by such a person, in such an assembly, was calculated to do unspeakable mischief by unsettling the confidence of numberless anxious parents, and by attempting to deprive Vaccination of more than half its virtue.*

Thorough was Baron in his defence of Jenner: no inconsistency appalled him. He records in capitals (as produced) the following as Jenner's solemn and final testimony, written, a few days before he expired, on the back of a letter, bearing the post-mark, 14th January, 1823—

MY OPINION OF VACCINATION IS PRECISELY AS IT WAS WHEN I FIRST PROMULGATED THE DISCOVERY. IT IS NOT IN THE LEAST STRENGTHENED BY ANY EVENT THAT HAS HAPPENED, FOR IT COULD GAIN NO STRENGTH; IT IS NOT IN THE LEAST WEAKENED, FOR IF THE FAILURES YOU SPEAK OF HAD NOT HAPPENED, THE TRUTH OF MY ASSERTIONS RESPECTING THOSE COINCIDENCES WHICH OCCASIONED THEM WOULD NOT HAVE BEEN MADE OUT.†

Self-deception after this pattern is far from uncommon, and is proof against evidence and death itself; but Jenner was not quite so crazy as his words imply. From his first opinion about vaccination, and its absolute efficacy against smallpox (unlike anything hitherto known in medical experience) he had retreated considerably. Even

* Vol ii. p. 197. † Vol. ii. p. 311.

so early as 1804 he had reduced his claim for vaccination to equality with variolation. In that year he observed—

> What I have said on Vaccination is true. If properly conducted, it secures the constitution as much as Variolous Inoculation possibly can. It is the Smallpox in a purer form than that which has been current among us for twelve centuries past.*

And again Baron cites him as saying—

> Duly and efficiently performed, Vaccination will protect the constitution from subsequent attacks of Smallpox, as much as that disease itself will. *I never expected that it would do more*, and it will not, I believe, do less.†

Jenner presumed freely on the forgetfulness of those he addressed. In a document so well known as his petition to the House of Commons in 1802, he expressly claimed that a person inoculated with cowpox was thereby "rendered perfectly secure from the infection of smallpox through life"; nor would the furore which attended the introduction of the practice have been possible had it been set forth as no more than a milder form of variolation. That cowpox was equivalent to smallpox for inoculation was laughed at by the variolators; but that a vaccinated person was as safe from smallpox as one who had passed through the disease, was true in no other sense than that Jenner wished it to be true, and prophesied accordingly. It was by such contrivances that he broke his own fall, and alleviated the disenchantment of the credulous.

Oddly enough Jenner's fiction, that vaccination was as good against smallpox as smallpox itself, was revived in the innocence of ignorance by Sir William Gull before a committee of the House of Commons in 1871. "Vaccination is as protective against smallpox as smallpox itself," said the fashionable physician. Confutation was, however, at hand. Mr. Marson (for thirty-five years resident surgeon of the Highgate Smallpox Hospital) attested that cases of smallpox after smallpox were comparatively rare—not 1 per cent.; whilst 84 per cent. of

* Vol. ii. p. 15. † Vol. ii. p. 135.

those admitted to the Hospital in 1864 were vaccinated. An instructive contrast between the logic of fancy and matter of fact!

Baron, with unscrupulous disregard of evidence, complains that vaccination should ever have been represented as an infallible preventive of smallpox; so that as pointed out in the Report of the Royal College of Physicians in 1807, "the fate of the new practice was made to hang on the occurrence of a single case of smallpox"; and goes on to observe—

> This, I am sorry to say, was a great misapprehension; the opposers of Vaccination endeavoured to place the fate of Vaccination on such an issue; but if Jenner's principles be duly considered, he never at any time sanctioned such an idea; and long before the practice of Vaccination became general, he anticipated failures, and explained the circumstances under which they were most likely to occur.*

The summary answer to this statement is, that it is untrue. Jenner anticipated no failures. On the contrary, he vehemently denied them; and when denial could no longer avail, he invented a variety of excuses, such as spurious cowpox and omnipresent herpes, to account for their occurrence; though always ready (as we have seen) to hark back to his original assertion that vaccination was "an infallible preventive of smallpox." Baron did not like the word "infallibility." He writes—

> I am not sure that the expression was ever used by Dr. Jenner himself. If he did use it, he certainly very soon accompanied it with the necessary qualification. He may perhaps at the outset have stated his opinion somewhat too decidedly; but no one qualified to judge can doubt that from the very beginning he was possessed of the gauge by which to measure the virtues of Vaccination.†

Whether he did make use of the word "infallible" is of slight importance. There are various modes in which the same meaning may be conveyed, and Jenner's was unequivocal. It was in 1801 that appealing to the rigid scrutiny that had taken place in the first profes-

* Vol. ii. p. 135. † Vol. ii. p. 134.

sional circles of Europe, he deliberately proclaimed it as certain—

> That the human frame, when once it has felt the influence of the genuine Cowpox in the way that has been described, is never afterwards, at any period of its existence, assailable by the Smallpox.*

When Lord Ellenborough in 1813 described vaccination as affording no more than a temporary security from smallpox, he merely expressed the diminished confidence of the community in the practice; but it is the habit of adventurers to ascribe adverse manifestations of public feeling to petty causes; and thus Jenner held that the Chief Justice was indulging a personal grudge when he threw doubt on the perpetual efficacy of his prescription. On one occasion, so ran the story, Ellenborough was relating in a company at St. James's how Jenner had so little faith in cowpox that he had used smallpox to inoculate his own child, when he was suddenly confronted by an irate personage, who exclaimed, "I am Dr. Jenner, and what you have stated is not true!" whereupon Ellenborough slunk aside in confusion. The fact of the rencontre in the sensational form, we may credit as we please; but about the variolation of Jenner's child there is no doubt whatever. We have the circumstance recorded by himself with such explanation as he considered adequate.

Turning to the *Inquiry*, we find under Case XXII. that Robert F. Jenner, aged eleven months, was vaccinated on 12th April, 1798, and that he did not receive the infection." The operation was not repeated, and he remained unvaccinated. Some time afterwards, whilst Jenner was residing at Cheltenham, Mr. Cother, a surgeon, happened to drop in, and having taken the child in his arms, mentioned in the course of conversation, that he had just left a family suffering from smallpox. "Sir," cried Jenner, "you know not what you are doing! That child is not protected." What was to be done? "There

* *Continuation of Facts and Observations*, p. 181.

was no doubt on my mind," says Jenner, "that the boy was infected;" and having none of the precious horse-grease cowpox in his possession, he held that he was without alternative, and by Mr. Cother the lad was immediately inoculated with smallpox.

The fact in due course got abroad, and, as Baron relates, was made the most of by the opponents of vaccination—

> One observed, "Dr. Jenner may say what he likes about Vaccination, but we know for certain that he has inoculated his own son with Smallpox." Another repeated this statement with the addition, that he had done so because he mistrusted Vaccination. A third added another tint to deepen the colouring, affirming that he knew that Dr. Jenner had abandoned his confidence in Vaccination, and the proof is incontestable, as he has inoculated his own child with Smallpox. These stories passed from mouth to mouth, and afterwards appeared in print with every malignant interpretation.*

Such talk was very natural, nor was it without justification. Jenner ought to have proved his sincerity by the vaccination of his son; and he who denounced variolation and variolators with such bitterness might have accepted the risk of infection from Mr. Cother rather than have compromised himself so injuriously. Moreover (as was asked at the time) if the child was infected, what was the use of inoculation? Variolation and vaccination (it was argued) may be serviceable in keeping off smallpox, but are of no avail after infection.

Vaccination has been described as a remarkable survival of superstition in hygiene—many, who disowning all other dodges for the maintenance of health, holding by it. Of course Jenner knew nothing of hygiene in the scientific sense—it was revealed after his time; but it is noteworthy that in none of his publications or letters is there any anticipation of the truth that has proved so fruitful in our experience, namely, that ill-health indicates ill-living, and that the misery of disease is only remediable in so far as we come out of the conditions of

* Vol. ii. pp. 43-49 and 198.

disease. Whilst of such truth he knew nothing, he might have known something. It lay plainly before him that smallpox was an affliction of the poor, and of the prosperous in so far as they shared the conditions of the poor, but he never recognised the fact. On the contrary, he cherished the fantasy that various diseases were derived from association with animals; and that thus smallpox originated in cowpox, which in turn came from horsegrease. "There," said he to his nephew, pointing to a horse with greasy heels, "there is the source of smallpox." * To entertain such an opinion was to be stone-blind to the true causes of disease, and therefore we have no reason for surprise that the Jenner household lived in chronic ill-health, piously submissive to what they supposed the divine will. Typhus fever was recurrent in the household without a suspicion that anything was amiss on the human side. There was a genius named Dawes Worgan, whom Jenner received into his family as tutor to his son, but ere a year had elapsed the poor fellow had two attacks of typhus, and finally succumbed to pulmonary consumption in 1809, in his nineteenth year. Chantry Cottage, Jenner's residence at Berkeley, was no temple of Hygeia: on the contrary, such a place at this day would be a terror to a respectable neighbourhood, and subject to the attention of the sanitary inspector.

The principle of vaccination conceded—that health may be purchased by disease, it was not surprising that it was thought that measles and scarlet fever could be extirpated by similar treatment. Sir Humphry Davy suggested that hydrophobia might be anticipated by the inoculation of another animal virus, but Jenner held that cowpox should be tried—"nothing like leather." It was reported from Constantinople that the plague itself was stayed by vaccination, and that experiments, exactly like those used to demonstrate its power against smallpox, had been repeated with complete success. There

* Vol. i. p. 135.

was not, however, enterprise in the East for the development of the quackery.

Jenner taught that distemper in dogs was preventible by vaccination, and accumulated a variety of "first-rate evidence" in proof. It was no transitory whim. He vaccinated twenty of the King's staghounds in 1801, and in 1809 contributed a paper to the Medico-Chirurgical Society on the subject, wherein he expressed the opinion that the disease had only existed in England for the past half century. Several great fox hunters had their hounds vaccinated, and the results were pronounced satisfactory.* Why, then, was the practice not continued? Why is not distemper exterminated? May we not say the reason is plain? The first-rate evidence was illusory. Men are apt to create the facts they wish for, but as desire subsides, they recover their normal eyesight. Cowpox, we are persuaded, was as good against distemper in dogs as against smallpox in human beings, and but for extraneous causes, it would have been abandoned for the one as for the other.

For Jenner it has to be said, that if deceived, he had much to excuse his self-deception. There are men possessed of convictions which they maintain in the face of an indifferent or antagonistic world, but Jenner was not such a man. If his *Inquiry* had gone the way of waste-paper, he would have offered no resistance; but instead, it was proclaimed by Pearson as worthy of universal attention, and the hour being propitious, the middle-aged country doctor suddenly found himself treated as the deliverer of mankind from smallpox, whilst Pearson, his promoter, was swept aside as a half-hearted worshipper of the new divinity. Adulation was administered without measure, and if Jenner took it for true, and was led to imagine that he had more in him than he ever imagined, what marvel! He became the centre of a European craze of a character and intensity that is perhaps without parallel. Emperors and kings,

* Vol. i. pp. 444, 450; Vol. ii. p. 148.

statesmen and philanthropists, men of science, and in short the whole educated world conspired to do him reverence. The craze gradually abated, and the abatement was most decided in the country of its origin, and chiefly in London where cowpox and its advertiser were most closely scrutinised. Jenner abhorred London. There he had proposed to flourish as a West-End physician, and there he had encountered a dismal failure. There, too, his antagonists were active, and their demonstration of the futility of his assertions most conclusive. We see his temper toward London in such a passage as the following from a letter to Dunning, dated Cheltenham, 21st February, 1806—

> What havoc the Anti-Vaccinists have made in town by the reintroduction of Variolous Inoculation! It is computed that not less than 6000 persons in the metropolis, and the adjacent villages, have fallen victims to the Smallpox since April last. One would scarcely conceive it possible, but these murders are, for the most part, to be attributed to the absurd productions of Moseley, Rowley, and that pert little Squirrel, to say nothing of Goldson. It is about London that the venom of these deadly serpents chiefly flows.*

Whilst the doors of almost every scientific corporation in the world were thrown open to receive him, the Royal College of Physicians of London maintained an honourable reserve; and when in 1814 his claim to admission was strongly urged, the majority insisted that, if received, he should submit to the usual examination—a sufficient check in Jenner's case.† The College has been reproached for its treatment of "the immortal benefactor of the human race," but it is forgotten how intimately the leading members were acquainted with his immortality, and with what disgust they must have received his confession in 1807 as to the non-existence of spurious cowpox.

Toward the close of his life, Jenner rarely appeared in

* Vol. ii. p. 352. The London Bills of Mortality record 1685 deaths in 1805 and 1158 in 1806 from Smallpox—numbers in no respect extraordinary.

† Vol. ii. p. 191.

London. His last visit took place in 1814, when he was presented to the Emperor of Russia. "I am happy to think," said Alexander, "that you have received the thanks, the applause, and the gratitude of the world;" to which Jenner made answer, "I have received the thanks and the applause, but *not* the gratitude of the world"—the absent gratitude being a periphrase for absent cash, and a hint to the Czar that he might repeat the superb munificence of his grandmother, Catharine, to her inoculator Dimsdale. The Emperor, however, gave nothing, and Jenner retired keenly disappointed. Whatever the imperial disposition, Jenner did little to render it more propitious by using his audience to denounce Walker and the Friends by whom vaccination was at that time chiefly promoted; for as Alexander said, "I love the good Quakers: they are my friends, indeed;" and whoever slandered them was not likely to advance in his favour.

With all he got Jenner reckoned himself ill-paid; and taking the words of his admirers for sincere, he was ill-paid. Many a successful slayer of his kind had much more from the House of Commons with less fuss than their ideal preserver; but there is often a measure of sincerity within insincerity, and many of those who praised Jenner most rapturously felt that he had not been dealt with illiberally as the advertiser of cowpox.

Jenner's wife died in 1815, an ailing, pious, affectionate woman, and thenceforth he dwelt in retirement until his death on the 26th of January, 1823, at the age of seventy-four. "Never," he wrote to his friend Gardner on 13th January, a week before his demise, "Never was I involved in so many perplexities." Hailed with acclamation in 1800-2 as the saviour of mankind from smallpox, during the remaining twenty years of his life he underwent a steady course of discredit as failure after failure was recorded and attested against vaccination. Appropriate therefore was his farewell to the world in 1823, "Never was I involved in so many perplexities." There was not enthusiasm left to effect the interment of his remains in

Westminster Abbey, and the funeral took place at Berkeley. An attempt was made to obtain a grant from Parliament for a monument, but the proposal fell flat. Baron then set on foot a subscription for the purpose, but it met with little encouragement. The only public bodies which contributed anything were the Edinburgh Colleges of Physicians and Surgeons, the first sending £50 and the second £10. With much difficulty sufficient was scraped together to order a statue from Sievier, which was set up at the west end of the nave of Gloucester Cathedral. The front panel of the pedestal originally bore the dates of birth and death, but Baron had them removed, considering the word JENNER all significant.

In latter times, in 1859, a statue was erected to his memory in Trafalgar Square, London, close by the College of Physicians, but it was felt to have an air of possible quackery about it, and by and bye was quietly removed to a corner in Kensington Gardens. There is, as I have remarked, a measure of sincerity even in insincerity; and it is impossible for any one with a lively sense of veracity to *know* Edward Jenner and entertain for him any respect.

CHAPTER XXVII.

THE MEDICAL POSITION IN 1823.

WHEN Jenner died in 1823, the judgment of the majority of the people was pronounced against cowpox inoculation; but medical men, who are expected to *know* something, and *do* something, against every ailment, rarely surrender a prescription until it can be replaced by another. The doctors therefore held by vaccination, but on modified terms; and the position to which they had been reduced is set forth in an article in the *Edinburgh Review*, for November, 1822, concerning which Jenner wrote to Gardner, 13th February, 1823, a week before his death—

I have an attack from a quarter I did not expect, the *Edinburgh Review*. These people understand literature better than physic. It will do incalculable mischief. I put it down at 100,000 deaths at least. Never was I involved in so many perplexities.

What an extraordinary article! working mischief incalculable, and bad for at least one hundred thousand deaths! A criticism in the *Quarterly* is said to have killed Keats, upon which Byron remarked—

> 'Twas strange the mind, that very fiery particle,
> Should let itself be snuffed out by an article.

If, however, Jenner was right, it will be allowed, I think, that the murder of a poet was exceeded in atrocity by the slaughter of at least one hundred thousand ordinary mortals. Wherefore, to discover the manner of the great iniquity, I looked up the *Edinburgh Review* and discovered the diabolical article. It is entitled "Vaccination and Smallpox"; is obviously written by the editor, Jeffrey; and the rock of offence was at once apparent. Doubt is thrown on the efficacy of vaccination to prevent smallpox; *ergo*, vaccination thus discredited will be neglected; *ergo*, vaccination thus neglected will enlarge the domain of smallpox; *ergo*, at least one hundred thousand persons will perish. Q.E.D. But it will be asked, "What did Jeffrey say?" The article thus opens—

Vaccination, we are perfectly persuaded, is a very great blessing to mankind; but not quite so great a blessing, nor so complete a protection, as its early defenders conceived it to be. The proof of this has been admitted with great reluctance; but it has unfortunately become too strong for denial or resistance. The first answers given to the instances of failure, with which the friends of Vaccination were pressed, were, either that the disease which had occurred after Vaccination was Chickenpox, and not Smallpox; or that the process of Vaccination had been unskilfully or imperfectly conducted; or that it was one of those very rare cases which occurred in the times of Inoculation, and from which Vaccination itself did not pretend to be wholly exempt.

The Report of the Vaccine Pock Institution for 1803 is cited, as follows, to show how absolute was the confidence in vaccination in the days of inexperience—

We have been alarmed two or three times with intelligence of Smallpox occurring several weeks or months after our patients had

undergone the Cowpox. We thought it our duty to visit and examine these patients, and also to inquire into their history among their attendants, and by these means we obtained the completest satisfaction that the pretended Smallpox was generally the Chickenpox.

As time went on, cases of smallpox after vaccination kept multiplying, and the various excuses to account for their occurrence, though obstinately asserted, utterly broke down. There remained no doubt whatever that to be vaccinated in the most approved fashion afforded no guarantee against smallpox. In 1820, said Jeffrey, the Board of the National Vaccine Establishment was compelled to make the following melancholy admission—

It is true that we have received accounts from different parts of the country of numerous cases of Smallpox having occurred after Vaccination; and we cannot doubt that the prejudices of the people against this preventive expedient are assignable (and not altogether unreasonably perhaps) to this cause. These cases the Board has been industriously employed in investigating; and though it appears that many of them rest only on hearsay evidence, and that others seem to have undergone the Vaccine Process imperfectly some years since when it was less well understood, and practised less skilfully than it ought to be; yet, after every reasonable deduction, we are compelled to allow that too many still remain on undeniable proof, to leave any doubt that the pretensions of Vaccination to the merit of a perfect and exclusive security in all cases against Smallpox, were admitted at first too unreservedly.

The significance of a confession like the foregoing is not to be estimated literally. It was exacted under irresistible pressure of facts, numerous, definite and undeniable, after every method of excuse and prevarication had been exhausted. In short, it was an authoritative retractation of the flaming medical testimony with which vaccination had been commended to the public in 1800, when the heads of the profession thought it their duty to declare in the newspapers—

That those persons who have had the Cowpox are perfectly secure from the future infection of the Smallpox.

And of Jenner's emphatic assurance—

That the human frame, when once it has felt the influence of the

genuine Cowpox is never afterwards, at any period of its existence, assailable by the Smallpox.

The occasion of Jeffrey's article was the publication by Dr. John Thomson of a treatise on a violent epidemic in Edinburgh, and other parts of Scotland, in 1818-19.* The disease differed from ordinary smallpox in respect of the smallness of the pustules, which contained a milky fluid, and began to dry up on the fourth or fifth day. In Thomson's words—

> The epidemic appeared to exhibit all the varieties of Smallpox from the mildest to the most malignant; and it was curious to observe that the mildest forms, as well as the most malignant, were strictly vesicular eruptions, in which scarcely a trace of purulent matter was to be seen from their commencement to their termination.

Whether this epidemic was smallpox or chickenpox, was the question. It was chickenpox said some. It was modified smallpox said others. It probably was chickenpox said Thomson; and if so, he argued, chickenpox should be accounted a variety of smallpox. The chief cause of uncertainty was, that the vaccinated constituted the majority of sufferers—

> Had the unvaccinated alone been attacked [wrote Thomson], nothing, it appears to me, but the most unreasonable scepticism could ever have suggested a doubt of the disease being genuine Smallpox.

Thomson reported 556 cases in Edinburgh of which—

310 had been Vaccinated;
41 had had Smallpox; and
205 had neither been Vaccinated nor had Smallpox.

And William Gibson, surgeon at Robert Owen's mills, New Lanark, had 322 cases, of which—

251 had been Vaccinated.
11 had had Smallpox, spontaneous or inoculated.
57 had neither been Vaccinated nor had Smallpox.
3 had had Smallpox and Cowpox simultaneously.

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* *An Account of the Varioloid Epidemic which has lately prevailed in Edinburgh and other Parts of Scotland; with Observations on the Identity of Chickenpox with Modified Smallpox.* By John Thomson, M.D. London, 1820. Pp. 400.

As is usual in epidemics of smallpox, it was the young who were the majority of sufferers; Thomson saying—

> The epidemic has been observed to attack those chiefly who were under ten years of age; *increasing years appearing in general to lessen the susceptibility to Smallpox contagion.*

Thomson supported his opinion that chickenpox and smallpox were interchangeable varieties of variola with much cogent evidence and argument. He cited instances in which they occurred together, one constitution bringing forth chickenpox where another brought forth smallpox, whilst the infection of one appeared at times in the manifestation of the other. The controversy is not one on which it is necessary to pronounce judgment beyond saying that the whole drift of philosophic pathology is now in Thomson's favour; and indeed at the time he wrote, his position would not have been seriously contested, save for the discredit it accumulated upon vaccination, One of Thomson's correspondents, P. Mudie, M.D., of St. Andrews, stated the difficulty with artless force. He wrote, 18th October, 1818—

> Of late years I have remarked, that the disease called Chickenpox has been much more severe than formerly; and many of the cases occurring after Vaccination, so much resembled Smallpox, that *if my mind had not been prejudiced against the possibility of such an occurrence*, I should have pronounced the eruption to have been of a variolous nature.

Notwithstanding his experience, Thomson held firmly by vaccination. Whilst compelled to admit that it did not avert either form of variola, he maintained with curious fervour that it made the disease milder, as if to excuse his partial surrender of faith. We all see more or less according to our prepossessions, and we need not blame Thomson if with his perspicacity he was unequal to the entire truth. The vaccinated belonged to classes who were better housed, better fed, and better cared for than the unvaccinated; and if their ailment had been measles or pneumonia in place of chickenpox, they would have all the same made better recoveries. Precisely the

same error is made at this day: what is due to kindlier conditions of life is ascribed to vaccination.

Some tried to account for the manifest failure of vaccination on the supposition that the original virus had lost its force in transmission from arm to arm, but Thomson would not allow that it had deteriorated. He said—

> The Vaccine Virus used in Edinburgh for a series of eighteen years produces exactly the same appearances as are delineated by Dr. Jenner as characteristic of Cowpox. I know, also, that the appearances of the vaccine vesicle produced by this matter, which must have passed through a succession of at least 900 individuals, agree exactly with those exhibited by vesicles produced by inoculation, *with the more recent equine matter with which I have been lately favoured by Dr. Jenner.*

The latter words are noteworthy. When Jenner's ascription of the origin of Cowpox in Horsegrease is referred to, the answer frequently is, that Jenner was mistaken, and that he did not persist in his opinion. It is true that he did preserve a judicious silence about horsegrease when he saw that it would mar rather than make his fortune. But when he obtained all he was likely to get, he resumed the expression of his original opinion, and used and diffused what he described as horsegrease; and the vesicles raised by the virus, and the cicatrices which remained were identical with those induced by so-called Cowpox.

Another point developed in Thomson's evidence was the mistake made crediting vaccination with the prevention of smallpox where there was no smallpox to prevent. The victories ascribed to vaccination were victories either over an imaginary or a retreating enemy. We cannot too firmly insist upon this point in presence of the claim continually advanced for the subjugation of smallpox by vaccination. For some cause undefined, and, probably in its full extent, undiscoverable, a subsidence of smallpox over the whole of Europe set in toward the close of last century, and continued during the early years of the present; and to this subsidence the favour

that vaccination met with was largely due. The decline in the disease concurrently with the introduction of vaccination, was ascribed to vaccination, although the decline prevailed among an overwhelming majority who had never received vaccination. To make good the claim for vaccination it would have been necessary to maintain that the vaccine rite, as applied to 2 or 3 per cent. of Europeans, effected the salvation of 98 or 97 per cent. For example, a great point was made by Jenner and his friends of the extinction of smallpox in Vienna, according to the following table—

Years.	Total Deaths.	From Smallpox.	
1791-1800	average 14,600 ...	835	or one in 17½
1801	... 15,181 ...	164	... 93
1802	... 14,522 ...	61	... 238
1803	... 14,383 ...	27	... 532
1804	... 14,035 ...	2	... 7,017

Yet it was never pretended that in these years more than a fraction of the Viennese were vaccinated, or that the death-rate of the city was reduced by the disappearance of smallpox. The like fatuity characterised the whole of the vaccinators' statistics. Smallpox had declined, *therefore*, they argued, vaccination is the cause of the decline, and multitudes were convinced by the illicit logic. When vaccination was, however, brought to the test of epidemic smallpox, its inefficacy became manifest, and thus Thomson had to avow, as the result of his experience in the Edinburgh epidemic of 1818-19—

> It is to the severity of this epidemic, I am convinced, that we ought to attribute the greatness of the number of the vaccinated who have been attacked by it, and not to any deterioration in the qualities of the Cowpox Virus, or to any defects in the manner in which it has been employed. *Had a variolous constitution of the atmosphere*, similar to that which we have lately experienced, *existed at the time Dr. Jenner brought forward his discovery, it may be doubted whether it ever could have obtained the confidence of the public.*

Such was the article which Jenner "put down for 100,000 deaths at least." Yet neither Jeffrey nor Thom-

son renounced vaccination. They agreed that whilst it could no longer be trusted to prevent smallpox, it made the disease milder in those it attacked. When a cherished belief is surrendered, it is rarely unconditionally: it is only by degrees that full concession is made unto truth.

CHAPTER XXVIII.

INTRODUCTION OF VACCINATION TO THE UNITED STATES.

LEAVING England for awhile, let us see how it fared with vaccination in some other countries.

As before observed, the introduction of vaccination to practice is sometimes described as having been a labour of difficulty, a strife with prejudice, a victory of light over darkness; but there was nothing in reality answering to such magniloquence. The battle was won for vaccination by variolation, for which it was exhibited as a harmless and more efficient substitute. Unless the entrance of vaccination into the place of variolation be recognised, its quick and easy triumph is inexplicable. A novelty that King George and Queen Charlotte, the Prince of Wales, and the Royal Dukes accepted without hesitation or reserve, could not in the nature of things have required the exercise of much intelligence. Any serious resistance proceeded from the variolators, who considered their craft in danger when parsons, women, and tradesmen were approved of as vaccinators by Jenner himself. Such opposition to vaccination as is common at this day was not possible in the early years of the present century. We know that health is the best defence of health, and that illness is proof of ill-living; but, to our forefathers, illness was a mysterious dispensation to be encountered with submission, relieved by prescriptions, magical and

natural. Hence not only dull Royalty was involved in the cowpox craze, but men of science like Davy, Wollaston, and Darwin, with the whole troop of men of letters, of whom Sir Walter Scott may be taken for spokesman. Describing Queen Caroline in "The Heart of Midlothian," he says—

> The lady had remarkably good features, though somewhat injured by Smallpox, that venomous scourge, which each village Æsculapius (thanks to Jenner) can now tame as easily as his tutelary deity tamed the Python.

For credulity thus expressed there was large excuse. What else, indeed, could one in Scott's position have been expected to believe? It was only through the hard disenchantment of experience that vaccination did not prevent smallpox, nor mitigate its severity, nor was in itself harmless, that the early delirium abated, and a less rabid persuasion supervened.

The wave of conviction spread from England over the world, and nowhere was the substitution of vaccination for variolation welcomed more enthusiastically than in New England. As Boston led the way in 1721 in the practice of smallpox inoculation, so from Boston in 1800 was announced the project for the extermination of smallpox by cowpox. But ere advancing farther, it may be well to say a word about Boston smallpox.

Boston was an extremely unhealthy town. For fifty years, from 1701 to 1750, the births were exceeded by the deaths. In a population of about 15,000, the annual death rate ranged from 30 to 70 per thousand. There were epidemics of fever and of smallpox; the latter occurring in general at intervals of ten years, when large numbers died, the smallpox as usual displacing other forms of fever, but nevertheless raising the mortality of the year. The most deadly outbreak of smallpox was that of 1721, the year in which Cotton Mather and Zabdiel Boylston introduced variolation. The mortality of that year was 1102, of which 884 were ascribed to smallpox. In 1752 there was an extraordinary epidemic, but how much of its prevalence was due to circumstance

and how much to contrivance, it is impossible to divine. Here are the figures, which are of singular interest—

BOSTON in 1752. Population 15,684.

	Had Smallpox.	Died.	Were Variolated.	Died in consequence of Variolation.
Whites,	5060	470	1985	24
Blacks,	485	69	139	6
Total,	5545	539	2124	30

Fled from Boston for safety.	Had neither Smallpox by nature or art.	Had Smallpox either by nature or art.
1843	174	5998

Under these heads the entire population of 15,684 was accounted for, with the important exception of the discrimination of the 5998, whose immunity was presupposed, into subjects of induced and spontaneous smallpox. The deaths, 569, were less numerous than in 1721, when 884 died, but the disease was more widely diffused, upwards of one-third of the inhabitants, 5545, being attacked. The epidemic exhausted itself within four months, the record standing thus—

January,	died,	-	1
February,	,,	-	2
March,	,,	-	2
April,	,,	-	119
May,	,,	-	205
June,	died,	-	203
July,	,,	-	31
August,	,,	-	5
September,	,,	-	1
			569

The diffusion of the epidemic was largely due to the extensive variolation that went on, no fewer than 2124 having been inoculated in the panic, and they moving freely about in the assurance of safety, spread the distemper on every side. For every five who had the smallpox, so to say, naturally, two had it artificially, and the one sort was almost as "catching" as the other. It was an instance of a community (excepting the 1843 who fled) rushing into smallpox to escape from smallpox. The deaths of 24 Whites and 6 Blacks from variolation gave rise to much concern, and by some they were spoken of as so many murders. Against this fatality was, how-

ever, set the low death rate of the regular sufferers, 539 out of 5545, or less than 1 in 10. The Rev. T. Prince, who communicated an account of the epidemic to the *Gentleman's Magazine* for 1753, p. 413, was puzzled to account for the variation from the London standard—

> Dr. Jurin computes that there generally die in London in the natural way 2 in 11 or 18 in the 100; but in Boston we see that not more than 1 in 10 died; whilst in the inoculated way the deaths were more numerous than is commonly allowed. What were the natural causes, under their Divine Director, of Smallpox in the natural way being less mortal in Boston than in London, and more mortal in Boston than in London in the inoculated way, may be worthy of our humble inquiries.

The difference was broader than Prince perceived. An outbreak of smallpox in which a third of the population was affected never occurred in London, and a mortality proportionate with that of Boston among a third of the Londoners would have appeared like a recurrence of the Plague. I am in nowise concerned to minimise the ravages of smallpox when conditions are prepared, as of design, for its development; but I do insist on their accurate definition. Boston suffered severely, but was by no means "decimated"—the invariable rhetorical phrase. The deaths were at the rate of 1 in 27, and, as observed, smallpox replaced other forms of fever. The 539 deaths from smallpox were not extra deaths; the excess was less than half that number, and might fairly be attributed to the extraordinary energy displayed in propagating the disease by inoculation.

Spite of such adverse experience, variolation continued to be a common, though intermittent, practice in America, and especially in New England, where the habit of doctoring for the cure of present ailments, and the prevention of anticipated ones, was established and inveterate. In Boston the practice became systematised, and the inoculated were confined for three weeks to an hospital situated on a promontory in the Charles River, where they were treated as veritable centres of infection—a course widely different from that pursued in the epidemic of 1752. Nevertheless, it is not to be supposed that smallpox was

ever endemic in New England as it was in London. Dr. Waterhouse writing in 1787 observed—

> I do not believe there is at present a single person infected by Smallpox in all the four New England Governments, that is, not one in a million of people.

The disease broke out now and then, and was always traced to some wayfarer, or ship, or parcel of goods—never to bad drainage, or no drainage, or the stenches that pervaded the domestic interiors of last century, whether in America or Europe. In this matter, the exercise of a little imagination is requisite to realise the historic facts: they are disagreeable; but if people will insist on comparing the smallpox of the 18th century with that of the 19th, it may become necessary to be explicit as to certain domestic details concerning which there is a conventional reserve.

It was by Dr. Benjamin Waterhouse, Professor of the Theory and Practice of Physic in the University of Cambridge, Massachusetts, that vaccination was introduced to America. He described the new rite in the *Columbian Centinel* of 12th March, 1799, as "Something Curious in the Medical Line"; and formally promulgated the novelty a year afterwards in a pamphlet thus entitled—

> *A Prospect of Exterminating the Smallpox; being the History of the Variolæ Vaccinæ, or Kine-Pox, commonly called the Cow-pox, as it has appeared in England: with an Account of a Series of Inoculations performed for the Kine-Pox in Massachusetts.* Printed for the Author at the Cambridge Press by William Hilliard and sold by him and other Booksellers in Boston. 1800.

Kine-Pox! Why Kine-Pox? The reason is stated by the Doctor—

> From kine the plural of cow; thus in the Scriptures, "And they took two milch-kine, and shut up their calves at home"; a word equally expressive, and, in the opinion of some, more delicate.

There we have it: *More delicate!* If it had been bull-pox the objection might have been insuperable. Writing to Jenner, 24th April, 1801, Waterhouse says—

> Could you believe that not a single inoculation with Cowpox has yet been effected in Philadelphia? It seems that the leading

physician there pronounces it too beastly and indelicate for polished society.*

The pamphlet on Kine-Pox set forth the mystery of the new inoculation as received from England with a significant omission—there was not a word in it about Horsegrease! Waterhouse was in correspondence with Pearson, and Pearson may have told him how not only the asserted generation of Cowpox in Horsegrease was discredited, but "how it was like to damn the whole thing"; which might have been true enough, but if true, Where then stood Jenner? He knew that cowpox did not prevent smallpox: the fact was notorious among the medical men in cowpox districts: and he had expressly pledged his faith in the *Inquiry* to Cowpox begotten from Horsegrease and to nothing else. But Horsegrease Cowpox did not suit the market, and it was withdrawn with Jenner's tacit assent, and spontaneous Cowpox advanced in its stead, and accepted as Jenner's veritable discovery. It might be good business to drop the horse out of the case, but what was it else?

Cowpox, testified Waterhouse, was unknown in New England, but he received the revelation concerning it at once—but *not*, be it repeated, Jenner's revelation: *that* he suppressed. He had long suspected that smallpox was communicated from brutes to the human race; and now his suspicion was confirmed. And, such being the origin of variola, it seemed to him not unreasonable that the disease as it existed in a mild form in kine might be used for inoculation with all the advantages pertaining to smallpox, whilst attended with neither injury to the inoculated, nor with risk of infection to those about them—

What makes this newly discovered disease so very curious, and so extremely important is, that every person thus affected, is ever after secured from the ordinary Smallpox, let him be ever so much exposed to the effect of it, or let ever so much ripe Smallpox matter be inserted into the skin by inoculation. In other words, a person

* Baron's *Life of Jenner*, vol. i. p. 442.

who has undergone the local disease and specific fever occasioned by the Cowpox Infection is thereby rendered ever after insusceptible of the Smallpox.

How incautious, to say the least, was the acceptance of this prophecy of perpetual security! With less than three years' experience an absolute prediction was delivered, received, and repeated over the whole earth as if by parrots. Such, however, is the habit of mankind when possessed by a strong delusion.

In justice to Waterhouse it has to be said that he did not commit himself openly until he had gone through the illusory experiments that were then fashionable in England. He had much difficulty in obtaining a supply of active virus. Several remittances failed, but at last he had one, an inch and a-half of infected thread, from Dr. Haygarth which proved, it was thought, effective.* His first patient was his son, Daniel Oliver, aged five; then another child aged three; then a servant lad aged twelve; then a weaned infant of one year—all five successful, whilst two domestics failed "to take"—seven experiments in his own household. Then he had the children taken to the Smallpox Hospital, where they were inoculated by Dr. Aspinwall, and issuing scatheless from the test, the truth was taken as demonstrated, and there was no need for further hesitation. Four gentlemen, including a physican, offered themselves for public encouragement—

> One of them [says Waterhouse] chose to live pretty freely by way of experiment, and the febrile symptoms, especially headache, were full as much as he could bear and walk about with. This convinced me that the Kine-Pox was a disease not to be trifled with.

Waterhouse then appealed to the pride of his countrymen—

* "It was Dr. Lettsom who first sent the Vaccine Lymph across the Atlantic, and consigned it to the fostering care of his friend Dr. Waterhouse."—Pettigrew's *Life of Lettsom*, vol. i. p. 121. "Dr. Waterhouse at length succeeded in getting some Cowpox matter from Dr. Haygarth of Bath, who forwarded it from Bristol."—Baron's *Life of Jenner*, vol. i. p. 386.

The people of New England, particularly of Boston, set a noble example to their elder brethren of Old England, in adopting the Turkish practice of Inoculation for the Smallpox in 1721. Now the English in their turn, lead the way in a practice still more salutiferous. For though the Inoculation which commenced here in 1721, stripped that horrid disease, the Smallpox, of more than half its terrors, yet it is the Kine-Pox that will effect its extermination.

Following this prophecy came a frank request for business—

Dr. Waterhouse informs those who have applied to him out of Cambridge to inoculate their families that he declined it only until the disorder had gone fairly through his own family, and until some of them had been inoculated by Dr. Aspinwall, and otherwise exposed to Smallpox. But having now confirmed his assertion, that the Kine-Pox protects the constitution from the infection of Smallpox by a fair experiment, he is ready to attend them whenever they choose. Those who live in Boston may rest assured that from the proximity of his residence to the capital, he shall make such arrangements as to be able to attend them as punctually as if he resided there.—CAMBRIDGE, 18th *August*, 1800.

After an English pattern he published the following table—

NATURAL SMALLPOX. A Contagious Disease.	INOCULATED SMALLPOX. Contagious.	KINE-POCK. Non-Contagious. Never fatal.
One in 6 who take it dies. It is like an attempt to cross a dangerous stream by swimming, where one in six perishes.	One in 300 dies. It is like crossing the stream in an old, leaky boat, where one in 300 perishes.	It is like crossing the stream on a new and safe bridge.

The operations, so hopefully begun, came speedily to grief. In a letter addressed by Waterhouse to Jenner, 24th April, 1801, we read—

One inch and a-half of infected thread from Dr. Haygarth was the whole stock from whence perhaps 3000 persons have been inoculated, *but I fear the greatest part of them have been spurious.* I gave out that the winter was an unfavourable season for this new inoculation, and by that means I suspended the practice throughout the country until the arrival of fresh matter and your letter. Now we are going on again, but not with the faith and spirit of the last season. Some unlucky cases have damped the ardour of a people who received this new inoculation with a candour, liberality,

and even generosity, much to their credit. The first political and literary characters in our nation are still warm advocates for the practice.*

Waterhouse continued to correspond with Jenner, and was regarded as his accredited representative in New England. Writing to Dr. Lettsom, 16th November, 1802, he says—

Dr. Jenner has just sent me a present I highly prize—a silver box inlaid with gold of exquisite taste and workmanship, bearing this inscription—

EDWARD JENNER to BENJAMIN WATERHOUSE.

But Mr. Ring annexed the superscription in rather an hyperbolical style—

From THE JENNER of THE OLD WORLD
To THE JENNER of THE NEW WORLD.

Long will it remain among the sacræ relictæ of my family. †

Waterhouse was a man of an ingenious turn of mind. When troubled with ill-results from his operations at the end of 1800, he tried what has since been called retro-vaccination, probably for the first time. Here are his words from his letter to Jenner, 24th April, 1801—

I inoculated one of my cows with the Vaccine Virus, and obtained from her a crop of matter on the ninth day, which produced the disease in the human subject to perfection. Is this experiment known among you? As I operated myself there was no avenue opened for deception in the whole experiment.

A sentence which follows is too characteristic to be passed over. Says Waterhouse—

I have invariably found that weakly children have been benefited by the Vaccine Inoculation, and some it has cured of the Hooping Cough.

And this after less than twelve months' experience!

Waterhouse had also to relate a case of cows having smallpox—

At one of our periodical inoculations, which occur in New Eng-

* Baron's *Life of Jenner*, vol. i. p. 440.

† Pettigrew's *Life of Lettsom*, vol. iii. p. 405.

land once in eight or nine years,* several farmers drove their cows to an hospital near a populous village, that the patients might have the benefit of their milk. The cows were milked by persons in all stages of Smallpox; and in consequence they had an eruptive disorder on their teats and udders that every one in the hospital, as well as the physician who told me, declared was Smallpox. Since Cowpox has been talked of, this account has been revived and credited. Have you found anything like it in England?

Waterhouse had inquiries from Virginia, and wished Jenner to let him have, if possible, a picture of the vaccine vesicle on the negro—

Could I procure two or three coloured plates, delineating the appearances on the skin of the negro, I would send them into such of our Southern States as are blackened by these degraded beings.

"Some in this country, as well as in England," observed Waterhouse, "having had all their objections to Kine-Pox obviated, persist in asking, 'Who can tell what may be the consequences in the lapse of years of introducing a bestial humour into the human frame?' I answer them as does Mr. Ring with a spirit and wit worthy of Franklin, 'Who can tell what may be the consequences in the lapse of years of introducing milk, beef steaks, or mutton chops, into the human frame?'"

The pertinacity with which this "wit" was employed by the early vaccinators leads us to suppose that they found it effective; but was ever argument by analogy more absurdly misapplied? Milk or steaks from a cow, or chops from a sheep known to be suffering from pox would be rejected with loathing; nor was it ever proposed to cook and eat cowpox; and yet corruption, mere association with which, would render milk, or steaks, or chops loathsome, it was not thought abominable to infuse into the blood!

"The first political and literary characters in our nation are warm advocates of the practice," said Waterhouse; and it was so. President Adams was quite of a

* As Dimsdale advised, the inhabitants of a village or district were inoculated with Smallpox simultaneously, so that all being infected none should be unwillingly infected!

mind with King George in that respect; and Jefferson not only approved of the practice in common with Queen Charlotte, but, as soon as he could obtain virus, set to work with his sons-in-law, and vaccinated their families and neighbours to the number of two hundred. There is a letter from Jefferson to Jenner in 1806, which is remarkable as an absolute confession of faith at a date when much had occurred to shake faith. The President wrote—

MONTICELLO, VIRGINIA, *14th May, 1806.*

SIR,—I have received the copy of the evidence at large respecting the discovery of the Vaccine Inoculation, which you have been pleased to send me, and for which I return you my thanks. Having been among the early converts in this part of the globe to its efficacy, I took an early part in recommending it to my countrymen. I avail myself of this occasion to render to you my portion of the tribute of gratitude due to you from the whole human family. Medicine has never before produced any single improvement of such utility. Harvey's discovery of the circulation of the blood was a beautiful addition to our knowledge of the animal economy; but on a review of the practice of medicine before and since that epoch, I do not see any great amelioration which has been derived from that discovery. You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived. Future nations will know by history only that the loathsome Smallpox has existed, and by you has been extirpated. Accept the most fervent wishes for your health and happiness, and assurances of the greatest respect and consideration.

TH. JEFFERSON.

That smallpox should be erased from the calendar of human afflictions, and be known only in history as extirpated by Jenner, were vain expectations; but to recognise their vanity did not lie within Jefferson's possibilities. He had been bred in the belief that inoculation with smallpox prevented smallpox, and it came forth as a corollary, that as cowpox was an equivalent for smallpox, if all were cowpoxed, the disease must be extirpated. His expectations, therefore, were not without plausibility. Nor was it possible for Jefferson in the light of his time to see that smallpox was no specific entity that could be got rid of *per se* whilst all else remained unaffected. We

know that if even vaccination made an end of smallpox, and did no harm of itself, we should reduce neither illness nor mortality (supposing no other change in the conditions of existence were effected), but should have our due allotment of disease in other forms. To attack smallpox as smallpox, and suppose that if suppressed we should be in anywise advantaged, is mere illusion. Zymotic diseases, to be dealt with effectually, must be dealt with as forms of a common malady; to get rid of one, we must get rid of all; and with a graver sense of the difficulties to be encountered we, too, believe with Jefferson, that smallpox may be extirpated, but in company with much else, and by practice that has no affinity with the creation of disease implied in vaccination.

Of all people the English are most abandoned to medical quackery, said Lady Mary Wortley Montagu; and the English characteristic was reproduced and exaggerated in New England. The first resistance to vaccination being overcome, there was a run upon the practice—

> The zeal of American medical men [says Baron] was excited to an unparalleled degree; but, unfortunately, their discretion did not keep pace with it. They disregarded the cautions of Dr. Waterhouse, and paid no attention either to the state of the matter with which they inoculated, or to the progress of the pustule. It appears, likewise, that the cupidity of persons not of the medical profession was stimulated, and the manner in which they carried on their traffic was alike indicative of their avarice and their ignorance. The followers of this trade obtained the shirt-sleeves of patients which had been stiffened by the purulent discharge from an ulcer consequent on Vaccination. These they cut into strips, and sold about the country as impregnated with the true Vaccine Virus. Several hundred persons were actually inoculated with the poison, which, in several cases, produced great disturbance in the constitution. A vessel arrived from London at Marblehead with a sailor on board, who was supposed to have Cowpox: matter was taken from him, and was used extensively. It was soon discovered that Smallpox matter had been employed, and *that* disease spread rapidly through the neighbourhood. These blunders, it is to be feared, were not confined to vagrant quacks, inasmuch as medical men were not quite blameless.*

* Baron's *Life of Jenner*, vol. i. p. 387.

Whilst such doings discredited vaccination in one way, they served it in another: they made it easy to conceal its failures and injuries by ascribing them to the use of spurious virus. Everything is to be gained for truth in the question of vaccination by taking it in what its believers allow to be its unexceptionable form, so as to leave no room for evasion. Smallpox in America as in England soon showed itself indifferent to the art of the vaccinator, and then it was settled that at least it made the disease milder; and under cover of the convenient fiction, it continued to be practised where fees were to be had for the performance.

The attitude of the medical mind to epidemics, and the ignorance of what we now regard as the first elements of sanitary science, are illustrated with touching sincerity in a letter addressed by Dr. Waterhouse, in 1817, to the surgeons of the United States army. Said the Jenner of the New World—

> You need not waste your time, or distract your attention by guessing at the remote causes of dysenteries or epidemic fevers. We learn from the highest authority, that the pestilence "walketh in darkness." The enemy approaches unseen. We are pretty well convinced that epidemic fevers depend not on any of those changes in the air that are pointed out by the thermometer, barometer, or hygrometer. These wide-spreading maladies, as well as endemics, or local disorders, seem as if they arose from some secret movements, or alterations in the earth, or on its surface—that is, on some new combinations in the soil, or some effluvium from a deeper situation, affecting not only the air we breathe, but the water which we use for everything. Epidemics seem to accompany or follow a blighted state of vegetation. They seem also to accompany an abundant harvest; but whether in the series of cause and effect is not fully known. As to myself, I'm weary of conjecture.

Well might he be weary! He does not say so, but neither does he make any reserve in favour of vaccination; and, after seventeen years' trial of it, the old physician must have included it in his cry of *Vanitas Vanitatum!*

CHAPTER XXIX.

INTRODUCTION OF VACCINATION TO INDIA AND THE EAST.

THE enthusiasm for cowpox in England was reproduced with fury among the English in India. It is always so. What is the fashion at home is an intenser fashion abroad.

When we say India, we speak as of a country when we are dealing with a continent—of not one but many peoples, of races numerous and tongues various: wherefore, in naming India, I would be understood as limiting my remarks to the portion designated, and to the population affected by English influence. In several parts of India smallpox is endemic—begotten in permanently unwholesome conditions of life, and cultivated and propagated by inoculation. When, therefore, it was heard that cowpox might be substituted for smallpox, and that the mild served every purpose of the severe disease, there arose a demand among the English for the virus, alike for their own and for native use. Dr. Underwood, writing to Jenner from Madras, 28th Feb., 1801, observed—

> I have read with very great pleasure your publications on Cowpox, and feel particularly anxious to introduce and extend it in this country, under the greatest confidence that it would save many lives. I have hitherto embraced every opportunity of inoculating with variolous matter, but the loss of a beautiful little patient has humbled me, and I confess I never now take up a lancet but with fear and trembling.*

It was easier to ask than to obtain. There was no cowpox to be heard of in India, and the long voyage round the Cape, and the tropical heat were fatal to its transmission. Repeated attempts were made, but all ended in failure. Jenner proposed to place a number of picked men on board an East Indiaman, and to have them successively vaccinated in the course of the voyage, so as to land with fresh virus in Bombay or Calcutta;

* Baron's *Life of Jenner*, vol. i. p. 410.

but the East India Company declined the proposal. An attempt was then made to raise a subscription for the purpose, Jenner putting his name down for 1,000 guineas; though it was difficult to imagine where the 1,000 guineas were to come from, unless out of the pockets of some of his admirers.*

These efforts were, however, superseded by the energy and ingenuity of Dr. De Carro, of Vienna. Lord Elgin, British ambassador to the Porte, had made acquaintance with De Carro, and had received virus from him with which his infant son and others were vaccinated at Constantinople. The news spreading abroad, Lord Elgin was entreated to meet the Indian demand, sending the vaccine overland to Bombay by way of Bagdad and Bussora. He made several futile attempts, and thereon determined to place the matter in the hands of De Carro; and for that purpose addressed himself to the Hon. Arthur Paget, British ambassador at Vienna, saying—

> I have so many applications for Vaccine Virus from Bussora, the East Indies, and Ceylon, that I beg you will immediately apply to Dr. De Carro, and request him to send some by every courier. †

De Carro accepted the commission with alacrity. He had already had an application from Bagdad, and, dismissing the vehicles which had been tried and failed, such as lancets of steel, silver, gold, and ivory, and threads enclosed in quills, he saturated lint with virus, and, placing it between glasses, in one of which was a cavity for its reception, tied them together, sealed the edges, and, taking them to a wax chandler, had them dipped until enclosed in a ball of wax, which was packed in a box stuffed with shreds of paper. In this manner virus was conveyed through Constantinople, across the deserts to Bagdad, where it was received on 31st March, 1802, still liquid, and was used "with complete success." The like success was reported from Bussora, Muscat, and Bushire. From Bussora virus was conveyed to Bombay, arriving,

* Baron's *Life of Jenner*, vol. i. p. 409. † *Ibid.* vol. i. p. 419.

after a three weeks' voyage, early in June. Twenty or thirty were inoculated with the Vienna virus, but only one "took," namely, Anna Dusthall, a child about three years of age, who was operated upon by Dr. Helenus Scott. The progress of the case was watched with intense anxiety, and correspondent satisfaction when the symptoms developed according to the recognised description. On the eighth day five children were vaccinated from Dusthall's arm, and loud was the rejoicing when it was known that for India was secured the genuine Variolæ Vaccinæ. From Bombay "the precious fluid" was in due course conveyed to Ceylon, Madras, Calcutta, and wherever English influence prevailed. De Carro was naturally elated with his success. The virus he transmitted was originally obtained from the stock of Dr. Sacco, of Milan, who had it off some Lombard cows.*

Jenner wrote to De Carro to congratulate him, 28th March, 1803—

> Since the commencement of our correspondence, great as my satisfaction has been in the perusal of your letters, I do not recollect when you have favoured me with one that has afforded me pleasure equal to the last. The regret I have experienced at finding that every endeavour to send the Vaccine Virus to India in perfection has again failed, is scarcely to be described to you; judge, then, what pleasure you convey in assuring me that my wishes are accomplished.†

The imported cowpox was diffused and recommended with energy and with fraud. Jenner, writing to Dunning, 2nd November, 1804, observed—

> Conceiving it might be a gratification to you to see how systematically they manage vaccine affairs in India, I have sent you a copy of a paper just transmitted to me from the India House. Would to Heaven we could boast of such arrangements here!

Here is the paper which sets forth the energetic policy pursued—

> FORT-WILLIAM, *15th January, 1804.*
>
> With a view of extending the practice of Vaccine Inoculation

* *Histoire de la Vaccination en Turquie et l'Orient.* Par Jean de Carro. Vienne, 1804.

† Baron's *Life of Jenner*, vol. i. p. 428.

throughout the East India Company's territories in India, the Governor-General in Council of Bengal has appointed a Superintendent-General of Vaccine Inoculation at the Presidency, and established subordinate superintendents at several of the interior stations of the country; namely, at Decca, Moorshedabad, Patna, Benares, Allahabad, Cawnpore, and Farruckabad. These superintendents are the surgeons of the stations, and are to act under the orders of the Superintendent-General in whatever regards Vaccine Inoculation. The civil surgeons also at the several judicial and revenue stations are to co-operate with these superintendents for the purpose of forwarding the general object.

Vaccine Inoculation has also been introduced with success into Prince of Wales Island, and it is intended to extend the practice to Malacca and other places to the eastward; and a confident expectation is entertained that the benefits of this valuable discovery will be diffused throughout Asia. It is even in contemplation to extend it to China; but as the suspicious disposition of the Chinese might possibly ascribe any attempt to introduce this novel practice to sinister motives, it has been postponed until the opinion of the Company's servants there can be obtained.

Much of this policy was due to the Marquis Wellesley, the Governor-General, whose habit it was to convert conviction without delay into performance. To what extent it was found practicable to substitute vaccination for variolation among the natives does not clearly appear. It was comparatively easy to operate upon those immediately dependent upon their conquerors; but it was a different matter to disarm the aversion of the external myriads. Supposing the variolators preferred their ancient practice because it was more lucrative, a number of them were brought to Calcutta, and inquiry made as to the amount of their gains, which ascertained, they were offered double pay if they would adopt vaccination. The offer was readily accepted, and other variolators, hearing of it, volunteered their services on similar terms, and were instructed and enrolled as official vaccinators. A declaration was drawn up and signed by twenty-six of these converted variolators, recommending vaccination to the Eastern world. The declaration was published in the *Calcutta Gazette*, printed in four languages, and widely circulated throughout India.*

* *The History and Practice of Vaccination.* By James Moore. London, 1817. P. 236.

So much was possible to Government; but other means of persuasion were not neglected. It was at first imagined that pox from the cow would exactly suit people who held that animal in reverence; but, on the contrary, the fact was converted by the Brahmins into an argument against its use, they contending, and justly, that cowpox was impure. To meet this difficulty, various pious frauds were attempted. It was pretended that vaccination was no novelty in India, and that it was known, sanctioned, and practised from time immemorial. Baron, Jenner's biographer, relates these details without animadversion—

A native physician of Bareilly put into the hands of Mr. Gillman, who was surgeon at that station, some leaves purporting to be an extract from a Sanscrit work on medicine, entitled "Sud'ha Sangreha," by a physician named Mahadeva, to this effect—

"Take the matter of pustules, which are naturally produced on the teats of Cows, carefully preserve it, and before the breaking out of Smallpox make with a fine instrument a small puncture (like that made by a gnat) in a child's limb, and introduce into the blood as much of that matter as is measured by a quarter of a ratti. Thus the wise physician renders the child secure from the eruption of the Smallpox."

The Sanscrit work from which this passage was asserted to be taken was never forthcoming, and by competent authorities was pronounced "nothing more than a well-meant device for the reduction of ignorant prejudices," the native physician who put the leaves into the hands of Mr. Gillman being included in the fiction. Baron continues—

In order to overcome these native prejudices the late Mr. Ellis, of Madras, who was well versed in Sanscrit literature, actually composed a short poem in that language on Vaccination. The poem was written on old paper, and was said to have been *found*, that the impression of its antiquity might assist the effect intended to be produced on the minds of the Brahmins while tracing the prevention to their sacred cow.

The late Mr. Anderson, of Madras, adopted the very same expedient, in order to deceive the Hindoos into a belief that Vaccination was an ancient practice of their own. It is scarcely necessary to observe that had any authentic record of such a practice existed these gentlemen would never have resorted to such contrivances to gain their object.*

* Baron's *Life of Jenner*, vol. i. pp. 556—559.

These impostors were not priests, but medical men; not Jesuits, but Protestants; not Levantines, but Englishmen in the service of the Honourable East India Company To what extent their frauds were operative is not related. They were probably too contemptuous of native acumen. For good and for evil the Hindoo listens to English advice courteously and without contradiction, but persists in his accustomed way of life with the equanimity of indifference. That vaccination was an ancient practice in India came to be repeated in Europe and seriously believed, when, Jenner's originality being impugned, the truth came out, that old Indian vaccination was a device limited to Indian circumstances, and never designed for Western acceptance.

In Madras vaccination was practised with much energy. Jenner, writing on 7th May, 1808, said, "Wonderful to relate, the numbers vaccinated in that Presidency in the course of last year amount to 243,175."* In Bombay it was claimed that smallpox was extirpated; Dr. Helenus Scott reporting, 5th December, 1806, that "in this island, swarming with mankind, no loss from smallpox has been suffered for several years since the introduction of vaccine inoculation."† It was not pretended that all the inhabitants of Bombay had been vaccinated, or even a considerable portion of them; but the early vaccinators appear to have regarded vaccination as a sort of charm, the possession of which kept off smallpox; that by the vaccination, say, of one-tenth of any population, the unvaccinated nine-tenths were protected. This faith in the vicarious efficacy of vaccination was not expressly avowed, but was implied in the numerous reports of extirpated smallpox in circumstances where no attempt was made, or was indeed possible, to effect universal vaccination.

Confuted and frustrated in England, it was Jenner's habit to sigh, and turn from his ungrateful country to the vast realms of Europe and Asia and America.

* Baron's *Life of Jenner*, vol. ii. p. 359. † *Ib.*, vol. ii. p. 92.

Writing to Dunning, on 23rd December, 1804, he observed—

> Foreigners hear, with the utmost astonishment, that in some parts of England there are persons who still inoculate for Smallpox. It must, indeed, excite their wonder when they see that disease totally exterminated in some of their largest cities and in wide-extended districts around them.

Mark the words—Smallpox totally exterminated in some of the largest cities in 1804; that was to say, after, *at the utmost*, five years' acquaintance with vaccination! A miraculous time—was it not? Jenner went on—

> Let us not, my friends, vex ourselves too much at what we see here. Let us consider this country as but a speck when compared with the wide surface of our planet, over which, thank God! Vaccinia has everywhere shed her influence. From the potentate to the peasant, in every country but this, she is received with grateful and open arms. What an admirable arrangement is that made by the Marquis of Wellesley, the Governor-General of India, for the extermination of the Smallpox in that quarter of the globe! Contrasted with our efforts here, what pigmies we appear.*

Omne ignotum pro magnifico est. What inference worth a straw could Jenner or anyone else draw from the introduction of vaccination to India? The number of the various Indian peoples was unknown; and the periods and prevalence of smallpox among them; also the extent to which they practised variolation. In the absence of such elementary information, tales of the triumphs of vaccination in India were so much romance.

So far as vaccination displaced variolation, it might be taken as the substitution of a less evil for a greater; and much is accounted for in some of the early records of vaccination when it is remembered that the new practice was welcomed as a deliverance from the inconveniences and horrors of the old; and that the discredited practice was frequently abandoned without resort to its successor. A cessation of variolation was a cessation of the culture and diffusion of smallpox; and vaccination had often the credit of the reduction of smallpox when the credit

* Baron's *Life of Jenner*, vol. ii. p. 24.

was due to the abatement of variolation. As to the propagation of smallpox by variolation, no one was more emphatic than Jenner, as for example—

Where Variolous Inoculation is put in practice, Smallpox must necessarily spread.*

Smallpox will never be subdued so long as men can be hired to spread the contagion by Inoculation.†

If then it be taken as conceded that variolation spread smallpox wherever practised, can it be fair to omit the consideration of the consequences of its abatement when estimating the results of the introduction of vaccination? Yet scarcely an advocate of vaccination permits the fact to enter into his reckoning!

The gratitude of the English in India to Jenner did not evaporate without substantial expression. A subscription was started, and between 1806 and 1812 he received remittances to the amount of £7,383, the contributors being—

Bengal, ...	£4,000
Bombay, ...	2,000
Madras, ...	1,383

An amusing instance of Jenner's ignorance of India is found in a letter to Dunning, 14th March, 1807, wherein he ascribes his English money from India to the gratitude of Hindoo women—

You will be pleased to hear that the *dingy* Hindoo ladies are convincing me of their grateful remembrance, not merely in words, but by a *tangible* offering, while my *fair* Christian countrywomen pass me unheeded by.‡

Jenner, in returning thanks to Dr. Fleming, of Calcutta, for the first remittance of cash in 1806, took occasion to communicate some English news, which is not without interest at this day. He wrote—

To say the truth, this country has been dreadfully supine in the matter of Vaccination hitherto. Some pamphlets, full of the grossest misrepresentations and forgeries, have been spread; and the com-

* Letter to Dunning, 23d December, 1804.
† Letter to Worthington, 4th May, 1810.
‡ Baron's *Life of Jenner*, vol. ii. p. 356.

mon people became so terrified, particularly when told that their children, if vaccinated, would take the similitudes of bulls and cows, that a great dislike to the practice has arisen among them; and these accounts have been circulated through the country with peculiar industry. The consequence has been the re-introduction of Variolous Inoculation, which has produced an epidemic Smallpox through the metropolis and the whole island, except in those parts where Vaccination had previously been so generally adopted as to forbid its approach. This, now too late, has opened their eyes, and they see the powers of the Cowpox. The folly of the oppositionists has gone so far as to exhibit prints of children undergoing transformation from the human being into that of the brute.*

These prints were, many of them, intended for fun, and could have no serious influence. The decline of faith in vaccination was due to the general discovery that it did *not* prevent smallpox, and that it *did* excite other ailments. "It made smallpox milder" was the apology even then coming into vogue. As for the epidemic of smallpox raised in London and the whole island by the neglect of vaccination and a return to variolation, it was a creation of Jenner's fancy. There was less smallpox in London in 1806 than in 1805; but if there was not more, the bold Jennerian would answer, there *ought* to have been, and it could only be through the mercy of Providence that there was not.

Throughout the century, the English in India have spared no pains to diffuse and enforce vaccination among the inhabitants, numerous medical men finding place and pay in the futile occupation. Smallpox can only be overcome by systematic sanitation, which is laborious and difficult; and among peoples whose conditions and habits of life freely generate zymotic disease, vaccination is as likely to be effective as any other sort of incantation. Sir Richard Temple states the position at this day in these words—

Smallpox is universally prevalent in India, carrying off tens of thousands of victims, children especially, in almost every province year by year, and impairing or disfiguring others for life. The Government has for many years made persistent efforts to arrest

* Baron's *Life of Jenner*, vol. ii. p. 89.

the disease by means of Vaccination, with remarkable success in some districts, like that of Kumaon in the Himalayas, but generally with indifferent success, and often without any perceptible result. The practice of Vaccination not being in vogue, Inoculation used to be largely adopted by the natives in many districts, but has now been prohibited, though not always prevented actually. The State everywhere undertakes or encourages Vaccination. Hundreds of native vaccinators are employed, and returns are rendered of large numbers of persons said to be successfully vaccinated. Nevertheless Smallpox appears again and again with terrible manifestations before the people, and causes them to disbelieve the efficacy of Vaccination.*

We now come to Ceylon, in which vaccination was held to have had a perfect triumph. "To Sweden and to Ceylon," says Baron, "Dr. Jenner was in the habit of pointing when he wished to prove what his discovery might accomplish; or when he lamented that fatal obstinacy of his fellow-creatures which, with such examples before them, could induce them to reject blessings within their reach."† Sweden we shall discuss in another chapter, and of Ceylon I may observe that a portion of the island was taken by the British from the Dutch in 1795, and that in several parts it was extremely unhealthy. Smallpox was a frequent and deadly epidemic, but to what extent there is no evidence save hearsay and estimates from hearsay. The Dutch did not concern themselves with the health of the natives, but when the English took over their settlements in 1800 in the midst of a severe epidemic, they opened hospitals for smallpox and for inoculation with smallpox under the supervision of Dr. Christie.‡ He, hearing the glad tidings of vaccination, resolved to introduce the practice, and having in 1802 received virus from Dr. Scott, of Bombay, he set to work with systematic energy and perseverance. Supported by the authority of successive Governors, he closed the hospitals, forbade variolation, organised a staff of vaccinators, and kept them employed,

* *India in 1880.* † *Life of Jenner*, vol. i. p. 426.

‡ *An Account of the Introduction, Progress, and Success of Vaccination in Ceylon.* By Thomas Christie, M.D. London, 1811.

until the greater part of the population under English influence was vaccinated. In the words of Moore, writing in 1816—

> At length the priesthood submitted to Vaccination, the last to adopt this innovation upon their ancient customs; and the remains of the Smallpox were happily extinguished in all that part of the island which belonged to Great Britain.*

That smallpox had been exterminated by vaccination in Ceylon was set forth by vaccinators as something indisputable; but there were two observations to make—first, that smallpox was often suppressed in the sense that for a time there was no smallpox in a certain population, and especially subsequent to a severe epidemic; and second, that variolation was suppressed. Granted that smallpox ceased in Ceylon coincidently with the introduction of vaccination, it may be fairly held that the exhaustion induced by the preceding epidemic, and the cessation of variolation, were sufficient to account for the phenomenon. What remains to be said of Ceylon, I shall leave Dr. George Gregory, physician of the London Smallpox and Vaccination Hospital, to say for me. He wrote—

> Ceylon was the British colony where the Government earliest interfered and most vigorously encouraged the practice of Vaccination. Salaried vaccinators were scattered over the whole island. So successful were their labours, that up to the beginning of 1819, it had often been said that the experiment of exterminating Smallpox had been made and successfully carried out in Ceylon. In July, 1819, however, a severe epidemic Smallpox broke out there. In 1830 a second epidemic overspread the island—in 1833 a third, and in 1836 a fourth. In these four epidemics, 12,557 persons were attacked, of whom 4,090 died, being at the rate of 33 per cent., or one out of every three.
>
> In each of these epidemics a certain number of vaccinated persons took Smallpox. The proportion of the vaccinated to the unprotected varied. In the third epidemic, out of a total of 460 attacked, 341 represented themselves as vaccinated.†

Vaccination was introduced to China from the English

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* *The History and Practice of Vaccination.* By James Moore. London, 1817. P. 242.

† *Lectures on the Eruptive Fevers.* London, 1843. P. 210.

factory at Canton, and Sir George Staunton translated into Chinese a tract on Cowpox, and had it printed at Canton in 1805, the translator's name and the foreign origin of the practice being suppressed. Jenner, writing to Dunning, 10th December, 1806, said—

> From Canton I have a most curious production—a pamphlet on Vaccination in the Chinese language. Little did I think, my friend, when our correspondence first began, that Heaven had in store for me such abundant happiness. May I be grateful!

The Chinese had their own system of variolation, namely, the use of pulverised smallpox scabs as snuff; but some of them accepted vaccination, tried it, and dropped it when they found it did not keep off the disease as warranted. Smallpox in China is almost exclusively a disease of childhood, and is little dreaded. Dr. D. F. Rennie, medical officer to the British Embassy at Peking in 1861-62, says of that city—

> Since 1820 vaccination (introduced from Canton) has been practised to a limited extent among the population—probably one-fifth may be vaccinated. At one time it was believed to afford protection, Smallpox not having been so common immediately after its introduction. Of recent years, however, confidence in it has considerably diminished, owing to the frequency with which those are attacked who have been vaccinated.*

Persia was sometimes referred to in the ravings that went on as to the triumphs of vaccination in the East; but what was known of Persia? The practice was introduced where Europeans were resident, but it never became general. Dr. C. J. Willis has recently described surgery and medicine in Persia as extremely rude and superstitious, and that "vaccination is not in favour, whilst inoculation, or the direct communication of the disorder, by placing the patient in the same bed with one suffering from smallpox of the most virulent type, is the method pursued." †

It was natural enough for Jenner, in presence of failure and contempt in England, to appeal to success in

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* *Peking and the Pekingese.* London: 1865.
† *British Medical Journal*, 26th April, 1879.

the East, and to try to overwhelm his adversaries with evidence which they could not overtake; but any one of judicial temper must have perceived that if vaccination was to be vindicated, data of a very different order would have to be forthcoming. Where the number of the population in a distant region was unknown, where the ordinary prevalence of smallpox among the people was undefined, where the extent of artificial variolation was unspecified, and the existence and intensity of related forms of zymotic disease were undescribed, what conclusion could be drawn as to the efficacy of vaccination that a man of science was bound to respect? Why should certain knowledge in England be surrendered for assertion from abroad.

CHAPTER XXX.

DIFFUSION OF VACCINATION THROUGHOUT EUROPE.

VACCINATION was accepted as a revelation, and diffused as a religion, and was almost everywhere received gladly. We have to bear in mind, however, that the way had been made straight for it by the practice of inoculation with smallpox; which practice, after a struggle prolonged over many years, had become an established part of medical art, and was only limited in its application by the inconvenience and risks that attended it. The promise of the primitive vaccinators was, that the security which resulted from inoculation with smallpox was to be had from inoculation with cowpox, with absolute certainty, absolute safety, and absolute permanence. The argument was, that since no one could have smallpox twice (however slight the attack), and as cowpox was a mild form of smallpox, it sufficed to be inoculated with cowpox to be safe from smallpox through life; and if only the infliction of cowpox were made universal, smallpox would be extirpated. Such was the plausible doctrine; so plausible that it had only to be stated to

command assent; whilst so great was the elation over the discovery (as much, perhaps, for deliverance from inoculation with smallpox as from smallpox itself) that it was accounted a sacred duty to diffuse its benefits over the whole earth. Greater good on easier terms it was difficult to imagine. With a scratch of a needle one of the worst penalties attached to over-crowding, to filth, and to ill-living, might be avoided and done away with for ever.

> How pleasant are such sugared lies,
> Deceiving by their sweetness!

The first cowpox missionaries were Dr. Marshall and Dr. Walker. £100 was teased out of the Admiralty, and £100 out of the War Office toward their expenses, and placed on board the *Endymion*, they proceeded, on 1st July, 1800, to the Mediterranean. At Gibraltar, Minorca, and Malta, they vaccinated soldiers and sailors, first operating on orphans and foundlings to give the gallant fellows courage. Then Walker accompanied Sir Ralph Abercrombie to Egypt, from whence, after a variety of adventures, he returned to London to serve as domestic apostle, and vex Jenner for the remainder of his life. Marshall proceeded to Sicily and Naples. In Palermo, in the preceding year, 1799, there had been an epidemic, in which, it was said, 8,000 had perished, and Marshall appeared on the scene as a belated messenger of salvation. At Naples he had a cordial reception from the wretched Ferdinand IV. and his wretched court, who, with general indifference or enmity to what was good, were ready to show themselves gracious toward cowpox. Marshall went through the customary performances of the variolous test and the exposure of the vaccinated to infection; and without further ado an hospital was opened, and all who would be saved from smallpox were entreated to hasten and receive the new inoculation.

> It was not unusual [wrote Marshall to Jenner] to see in the morning a procession of men, women, and children, conducted through the streets by a priest carrying a cross, coming to the hospital to be inoculated. By such popular means, the practice

met with no opposition; and the common people expressed themselves as certain that it was a blessing sent from Heaven, though discovered by one heretic and practised by another.

When Marshall was at Gibraltar, Lord Keith issued the following memorandum to the fleet—

H.M. Ship *Foudroyant*,
GIBRALTAR BAY, *19th October, 1800.*

Any soldiers, seamen, or marines in the Fleet who may not have had the Smallpox, and wish to avoid that dreadful malady, may, by application to Dr. Marshall, on board the flag-ship, be inoculated with the Cowpox, which, without pain or illness, or requiring particular diet or state of body, or leaving any marks, effectually excludes all possibility of the patient ever being affected with the Smallpox.

By command of the Vice-Admiral, PHILIP BEAVER.

To the respective Captains of the Fleet.

I may observe, in passing, that there was little delay in introducing vaccination to the British navy. Sir Gilbert Blane was urgent, Earl Spencer, first Lord of the Admiralty, acquiescent, and Dr. Trotter, physician to the fleet, enthusiastic. So early as 9th December, 1800, Trotter was prophesying—

The Jennerian Inoculation will be deservedly recorded as one of the greatest blessings to the navy of Great Britain that ever was extended to it.

Smallpox was one of the pests of the service. Trotter, writing 20th February, 1801, said—

Within the past seven years there have been more than a hundred instances in which the seamen have been infected; twenty having occurred in the last six months in the Channel fleet alone.

These outbreaks were invariably referred to an origin external to the ship; as if anywhere smallpox could have had a more congenial breeding-place than the crew of a man-of-war! As Dr. Johnson observed, "When you look down from the quarter-deck to the space below, you see the utmost extremity of human misery; such crowding, such filth, such stench!"* Incited by the enthusi-

* Boswell (Croker's Ed.) vol. vii. p. 102.

astic Trotter, the medical officers of the Fleet subscribed for a gold medal, and presented it to Jenner. On the obverse, Apollo was represented introducing a young seaman recovered from cowpox to Britannia, who, in return, extended a civic crown, on which was inscribed JENNER; above were the words, *Alba nautis stella refulsit*, and below the date, 1801. On the reverse was an anchor and over it *Georgio Tertio Rege*, and under it *Spencer Duces*. The medal was presented to Jenner in February, 1801.

The dates are worth noting afresh. Jenner's *Inquiry* was published in the summer of 1798; and thus we see that within three years his prescription for the prevention and extermination of smallpox was adopted in a branch of the public service where obstinate conservatism was the ruling temper; and an assertion that only time could test was accepted without hesitation as verified and certain. If vaccination had answered to the claim made for it, the haste wherewith it was acknowledged would have been unjustifiable, and wholly unlike the struggle that truth has commonly to pass through in order to obtain supremacy in the intellect and practice of mankind.

The first attempts to inoculate with cowpox in France proving futile, Dr. Woodville went over to Paris in 1800 to show in practice the method of operation. He had a warm reception, and the Quaker was overwhelmed with the exuberant attentions to which he was subjected. In the *Moniteur* he was described as "a learned man, animated with generous zeal, and worthy of gratitude and praise;" who had inoculated six thousand children with invariable success; and that cowpox as a preventive of smallpox could only be spoken of as something miraculous. A house was opened as a vaccine station, and men, women, and children, flocked thither to receive the benign fluid and life-long protection from a dreadful malady.

When the negotiations for the peace of Amiens were in progress, 1802, an address was presented with much pomp to the Marquis Cornwallis by the Medical Com-

mittee of the Somme, claiming brotherhood with the physicians of England, eulogising Jenner, denouncing his detractors, stigmatising variolators as acting neither from the love of truth nor for the glory of their profession, but, from avarice and hatred of improvement; whilst, as the result of numerous experiments, "the discovery made in England had been stamped with the seal of infallibility in France."

At first, vaccination in France was left to voluntary effort, and made little progress in face of a strenuous resistance developed by alarmed variolators; but a severe smallpox epidemic in 1802 incited the Government to action. A medical commission was appointed to investigate and report, and in 1804 it was determined to spare no effort to extend vaccination over the whole of France. A Central Committee for Vaccination was constituted, and appeals and commands were addressed to the clergy and officials of all orders to have those under their authority and influence inoculated with cowpox. Some préfects were content to recommend and warn, but others adopted more vigorous measures, such as the exclusion of the unvaccinated from schools, from employment, from charities—in short, anticipating much legislation that has come into force, or that fanatics wish to bring into force. Nevertheless, the progress made did not satisfy Napoleon, and seeing that until vaccination was everywhere paid for by the State, its performance must remain irregular and perfunctory, a manifesto was issued to the effect that his Majesty the Emperor and King had learned from the reports of the Central Committee that the preservation and increase of his vast dominions were immediately related to systematic and universal vaccination; wherefore, his Majesty, wishing to give a signal mark of his paternal solicitude for his subjects, had granted to his Excellency the Minister of the Interior, an annual special credit, destined to provide for the expenses necessary for extending the new practice, and for forming centres of issue of vaccine virus in twenty-four of the chief cities of the Empire—these, then, including Brussels, Florence, Parma

and Turin. And his Majesty had also, out of his paternal benevolence, provided annual prizes as incentives to emulation in propagating vaccination, so that the scourge of smallpox might be completely banished from his territories.

It would be idle to speculate as to how much serious faith lay within this apparent zeal for vaccination; for, as Professor Seeley observes, "Napoleon seemed to care for no opinion, though he adopted, with studied artificial vehemence, every fashionable opinion in turn." There might be, I dare say, something piquant to his theatrical genius in opposing his odious contempt for human life to the rigorous enforcement of what was considered a supreme prescription for its preservation. Jenner availed himself of the Emperor's histrionic instinct in soliciting the release of English travellers detained in France. To one of these occasions we owe the artless anecdote of the arrest of Napoleon's refusal by the interposition of Josephine, who exclaimed, "Jenner!" The Emperor paused and said, "Jenner! ah, we can deny nothing to that man!" It is sad to relate, the favour was not reciprocated. When Jenner, at the suggestion of Baron Corvisart, appealed to the British Government for similar indulgence to a Frenchman, he had to report that there was no charm in his intervention among his countrymen.

That vaccination should have a welcome in Spain was not surprising, after its reception in Naples. The craze was universal, and diffused through the lowest intelligences. Cowpox was introduced to Madrid with the certificate of France under that of England; and, spite of the distractions of the time, excited much attention. Mr. Allen, secretary to Lord Holland, writing to Jenner from Madrid in 1803, observed—

> There is no country likely to receive more benefit from your labours than Spain; for, on the one hand, the mortality among children from the Smallpox has always been very great; and, on the other hand, the inoculation for the Cowpox has been received with the same enthusiasm here as in the rest of Europe; though I

am sorry to add that the inoculation of the spurious sort has proved fatal to many children at Seville, who have fallen victims to the Smallpox after they had been pronounced secure from that disease.*

There were philosophising doctors in Madrid who did not see why cowpox should possess a singular efficacy, and induced the King, in 1804, to order that all the children in the foundling hospital should be inoculated with goatpox. They did not, perhaps, know that Jenner had inoculated his son with swinepox, and that the child underwent the variolous test on several occasions with impunity.

The great event in connection with Spain was the expedition of Dr. Francis Xavier Balmis, physician to his Catholic Majesty. He obtained a concession to introduce vaccination to the colonies in America and Asia, and to defray expenses by freely trading in merchandise. He sailed from Corunna, 30th November, 1803, with twenty-two children for the propagation of virus. The Canary Islands were first visited, then Porto Rico, and at Caracas the party divided, Don Francis Salvani proceeding to Peru and Chili, whilst Balmis attended to Cuba and Mexico, crossing the Pacific to the Philippines with twenty-six children to maintain the succession of the virus, and proceeding from thence to Macao and Canton. Having circumnavigated the globe as vaccinator and trader, Balmis re-appeared in Madrid with great *éclat*, and kissed the King's hand on 7th September, 1806. Philanthropy and business were successfully combined, for as Moore, writing in 1817, observes—

> Nearly three years were nobly spent by this excellent man in putting a Vaccine Girdle round the globe; and it is an additional pleasure to learn that by trading during his circumnavigation, he acquired an easy fortune. He now enjoys at Madrid the distinction he has merited, and patronises the diffusion of Vaccination through the Peninsula.†

* Baron's *Life of Jenner*, vol. i. p. 604. Allen little suspected that there never was any spurious Cowpox; that it was only "spurious" when it did not prevent Smallpox.

† *The History of Vaccination.* By James Moore. London, 1818. P. 279.

The expedition of Balmis naturally excited much attention, and its progress and results were described in terms of inflated rhetoric. Thus, we read in Baron's *Life of Jenner*—

The conductors of the expedition were *everywhere* welcomed with the *utmost enthusiasm*. It was to be expected that the representatives of the Spanish Monarch, and all the constituted authorities, would gladly co-operate; but it was scarcely to be anticipated that the unenlightened minds of the Indians would so soon appreciate the value of the mission. It is, nevertheless, most gratifying to know that the numerous hordes which occupy the immense tract of country between the United States and the Spanish colonies *all* received the precious fluid with *the utmost readiness*. They acquired the art of vaccinating, and soon performed the operation with great dexterity.

Thus not only the Spanish Americans were brought under the dominion of cowpox, but the Indians, yea, *all* the Indians; and not reluctantly, but joyfully, and became experts in the practice of the rite! Baron continues—

Fame had preceded the arrival of Salvani at Santa Fé. On approaching the capital, he was met by the Viceroy, the Archbishop, and all the civil and ecclesiastical authorities. The event was celebrated with religious pomp and ceremonies; and in a short time more than fifty thousand persons were vaccinated. Similar honours awaited the expedition *throughout its whole course*. At Quito they were greeted with boundless joy and festivity. Such expressions well became them. The people of Colombia, the Indians more especially, having been often scourged by the horrid ravages of Smallpox, regarded it as the most terrible affliction which Heaven could send them. On its first appearance in a village, a panic seized every heart; each family prepared an isolated hovel, to which those who were supposed to be infected were banished. *There*, without succour, without remedy, and with a very insufficient supply of food, they were exposed to the alternations of a very variable climate, and left to their fate. *In this way whole generations perished*. Under Viceroy Toledo the population of the native Indians had amounted to 7,500,000; but at the time of the Balmis expedition, the number was supposed to be reduced to one-fifth—that is 1,500,000.*

Indian and savage statistics in connection with smallpox and vaccination are usually little else than exercises

* Baron's *Life of Jenner*, vol. ii. pp. 80-2.

in imaginative desire—less what is true than what is wished to be true, or to be taken for true. We know the difficulty of vaccinating populations dwelling within defined limits and under highly organised governments, and we can therefore estimate the claims made for Balmis and his partners as roving traders and quacks in the territories occupied by Spaniards and Indians. Yet it was with yards of mythical rubbish of this sort that English vaccinators tried to divert the attention of their countrymen from the failures of vaccination within their own experience; and when worried with ever-recurring disasters at home, it was in turning to Mexico and Peru that Jenner professed to find consolation.

Dr. Sacco, of Milan, was described as "the apostle of vaccination in Northern Italy," and "unquestionably the greatest vaccinator in the world."* His operations received the sanction of the Napoleonic administration, and as early as 1801 he was appointed Director of Vaccination to the Cisalpine Republic. "Strong measures," writes Moore, "were adopted; proclamations were read from every pulpit; vaccination was practised in every church; and the clergy gave such effectual aid, that the Professor and his associates in three years vaccinated 70,000 persons, and extinguished smallpox in Lombardy."† In other words, the vaccination of 70,000 persons extinguished smallpox in a population of several millions! Baron enlarges the numbers, saying that Dr. Sacco and his assistants in the course of eight years vaccinated 1,300,000 persons; and cites a letter from Sacco, dated from Trieste, 5th January, 1808, with the following extraordinary statement—

> During eight years I reckon more than 600,000 vaccinated by my own hand, and more than 700,000 by my deputies in the different departments of the kingdom. I assure you, out of a population of 6,000,000 to have vaccinated 1,300,000 is something to boast of; and I flatter myself that in Italy I have been the means of promoting Vaccination in a degree which no other kingdom of the same population has equalled. ‡

* Baron's *Life of Jenner*, vol. ii. p. 234.
† *History of Vaccination*, London, 1817. P. 263.
‡ *Ib.* vol. ii. p. 112.

Moore's 70,000 is a credible number, whatever may be thought of its vicarious operation; but Sacco's 600,000 by his own hand in eight years! Ah, well! when we are lost in the fabulous, it is unnecessary to waste our strength in the discrimination of the greater from the less in falsehood. Nevertheless, taking Sacco's figures, we have to observe that the vaccination of 1,300,000 saved 6,000,000 from smallpox. That Italy was freed from smallpox is true, and the exemption of the population, whether vaccinated or unvaccinated, was prolonged over nearly thirty years. The disappearance of the disease had, however, set in before vaccination was heard of, but the subsidence was claimed for Sacco, although it extended to millions of Italians who owed nothing to the new prophylactic. As already observed, from some cause undefined, the area and intensity of smallpox was signally diminishing toward the close of last century, and this in spite of the stimulus applied to the disease by variolous inoculation. It may have been so stimulated as to have been worked out—forced, as it were, to exhaustion, after the habit of much else, good and bad, when developed to the extremity of existence.

As a grand vaccinator Dr. De Carro, of Vienna, was scarcely less distinguished than Sacco. He was a Swiss from Geneva, who had studied and graduated at Edinburgh, and settled in Vienna. He performed the first vaccination on the Continent, in 1799, with virus conveyed on a couple of threads from Dr. Pearson; and in 1802 he succeeded in transmitting the first effective virus to India. De Carro conducted his operations with great energy and tact, and in 1802 he induced the Austrian Government to issue an ordinance conferring on vaccination Imperial sanction and recommendation. Concurrently with this activity, smallpox was abating, and *post hoc* was converted into *propter hoc*. De Carro was credited with the extinction of smallpox in Vienna; but as no more than a portion of the citizens had been vaccinated, Vienna thus supplied another instance of the vicarious influence of the Jennerian rite.

Sacco and De Carro corresponded with Jenner, and it is worth noting that both concurred with him in the opinion that cowpox originated in horsegrease; and, further, that horsegrease was as good against smallpox as horsegrease cowpox itself. Indeed, Sacco set up a stock of virus derived from horsegrease, operated with it, and supplied De Carro, who used it so freely in Vienna that, as he said, he could not tell the vaccinated from the equinated. Writing to Jenner, on 21st June, 1803, De Carro observed—

> The means of making your discovery were everywhere; yet nobody before you had the least idea of the singular connection between the Horsegrease, the Cowpox, and the Smallpox.*

The favour shown for vaccination by the English Court facilitated its adoption throughout Germany; and yet it might be said the craze went of itself, compelling patronage and exacting advocacy. The King of Prussia opened a Royal Inoculation Institute in Berlin, and tracts and medals, speeches and sermons, were brought into requisition to recommend the new rite. From the furore created, many were led to believe that all Prussia was vaccinated, and as smallpox ceased to prevail, cowpox had the credit. To vaccinate a nation, however, is far from easily accomplished, and when we refer to the official accounts, we discover that, notwithstanding great ado, the numbers operated upon constituted less than a tithe of the people. Jenner cites a report of Professor Avelin, of Berlin, in a letter to Moore, 15th February, 1812, as authority for these statistics—

> The anniversary of the invention of the Cowpox Inoculation, or the Jennerian Feast, was celebrated very solemnly at Berlin on 14th May. By public accounts, it appears that there were inoculated in all the Prussian States—

In 1801	9,772
1802	17,052
1803	50,054
1804	102,350
1805	43,585

> At these times the population was about 9,743,000. From 1806

* Baron's *Life of Jenner*, vol. ii. p. 432.

to 1810 (since the horrible war and the diminution of the population to 4,338,000) the inoculated were 160,329. Dr. Bremer alone at the Royal Institute in Berlin inoculated 14,605. The total, as officially and voluntarily sent to the Government, amounted to 402,720 vaccinated, but certainly one-half was not officially mentioned. It may certainly be at least 600,000, or even 800,000.*

Supposing a million had been vaccinated in Prussia in the course of ten years, let me ask once more, how could they have saved the remaining millions from smallpox? Yet, with knowledge of these figures, Moore, the Director of the National Vaccine Establishment in London, did not hesitate to write—

> The King of Prussia directed his children to be vaccinated, and also issued orders that Vaccination should be immediately employed in the Army; and the new practice encountered no further difficulties. By which, and by the total abandonment of Variolous Inoculation throughout Germany, the Smallpox rapidly declined; and in a few years was extinguished in some of the largest cities, from whose purlieus infectious diseases are expelled with great difficulty. Thus even in Vienna, where full four hundred persons had annually been destroyed by the Smallpox, this mortality diminished rapidly after the introduction of the Vaccine, and in five years absolutely ceased.†

Russia, of course, followed suit in cowpox inoculation. At the coronation of Alexander in Moscow in 1801 a foundling was operated on, christened Vaccinoff, pensioned for life, and dispatched to St. Petersburg to serve as a source of virus for other foundlings. Then followed imperial decrees prescribing vaccination, and Dr. Crichton was directed to organise a medical staff for the performance of the rite in each province of the Empire. In 1811 a ukase was issued commanding all Russians to be vaccinated within three years. As measuring the possibilities of despotism in such a matter, we learn from Dr. Crichton that between 1804 and 1812 there were 1,235,597 vaccinations performed in Russia—a similar number to that which Sacco professed to have accomplished in Northern Italy in the same time. It was estimated in Russia that of every seven children born, one perished

* Baron's *Life of Jenner*, vol. ii. p. 378.
† *History o Vaccination*, p. 245.

of smallpox, and therefore Crichton argued the lives of 176,514 had (up to 1812) been saved by vaccination. The calculation illustrates the facility with which the early vaccinators deceived themselves—first, as to the certainty of their prophylactic; second, as to its vicarious efficacy; and, third, in assuming that a reduction in smallpox represented a reduction in mortality.

From Crichton, too, we learn that there were anti-vaccinists in Russia in those days—

> Notwithstanding the supreme order of His Imperial Majesty, that all his subjects be vaccinated within three years, we find that, powerful as his Majesty is, this cannot be executed. There is a power greater than sovereignty, namely, the conscience of religious opinions of men, and in one or two of the distant governments there exists a peculiar religious sect belonging to the Greek Church, who esteem it a damnable crime to encourage the propagation of any disease, or to employ any doctors, or to swallow any medicines under the visitations of God. Reason has been employed in vain with these poor people; they have been threatened with severe punishments in case they remain refractory, but all to no purpose. You may well imagine that no punishment has been resorted to, though threatened, and the Government has come to the wise conclusion of leaving the dispute to time.*

To complete this rapid survey of the diffusion of vaccination throughout Europe, there remain Sweden with Finland, and Denmark with Iceland; but as the case of Sweden is specially interesting and instructive from the fulness and precision of its vital statistics, coupled with the claim made by vaccinators that Sweden affords irrefutable evidence of the efficacy of their prescription, I reserve it for a special chapter. There is nothing pleasanter than finding the strongholds of one's antagonists, capturing, and occupying them.

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* Baron's *Life of Jenner*, vol. ii. p. 186.

CHAPTER XXXI.

SWEDEN, DENMARK AND ICELAND.

JENNER was in the habit of pointing to Sweden and Ceylon as proofs of what vaccination might accomplish. We have seen how badly Ceylon answered to his reference; and I now proceed to inquire whether Sweden served his purpose any better.

The decline of smallpox in some communities, contemporaneously with the introduction of vaccination, might be ascribed to the cessation of inoculation with smallpox —virtually the culture of that disease; but in Sweden little had to be accounted for in that way. Spite of strong recommendations, variolation was rarely practised, and never became popular. The very year that vaccination was introduced, Dr. Acksell, of Kalmer, stated in an official report, dated 30th March, 1801, "that it is impossible to convince the lower classes of the advantages of inoculation. Dr. Colliander and I have had it announced to the people from the pulpit, that we were ready to give our services, gratis, in inoculating their children, but not a single person applied." And such undoubtedly was the state of things throughout the kingdom.

Sweden last century was sorely afflicted with smallpox, and, considering the repute of variolation in other lands, it is surprising how the people refrained from its vaunted protection. It is thought dreadful that in London one death in ten should have been due to this disease, but in Sweden the ratio stood as high as one in seven. To give some idea of the extent of the mischief at its highest and its lowest, let us look at eighteen years in the latter half of the century—

Year.	Population.	Total Deaths.	From Smallpox.
1752	1,799,188	49,467	10,302
1757	1,870,372	55,829	10,241
1763	1,940,011	64,180	11,662
1768	2,006,790	54,751	10,650
1769	2,015,127	54,991	10,215
1773	1,972,407	105,139	12,130
1775	2,020,847	49,949	1,275
1776	2,041,289	45,692	1,503
1777	2,057,147	51,096	2,943
1778	2,073,396	55,028	16,607
1781	2,132,912	54,313	1,485
1784	2,145,213	63,792	12,453
1786	2,156,109	55,951	671
1787	2,163,862	51,998	1,771
1792	2,211,643	52,958	1,939
1797	2,322,814	55,036	1,733
1798	2,344,228	53,862	1,357
1800	2,347,303	73,928	12,032

In these figures we see how wide were the variations in smallpox mortality prior to the introduction of vaccination; and also how indifferent was its influence on the general mortality, much smallpox not raising the death-rate, nor little smallpox lowering it.

Among the factors of mortality in Sweden were scarcity and famine. At this day, when the ends of the earth are drawn together, we are apt to forget the struggle, the misery, and the sickness that prevailed when a deficient harvest in one country, or parts of the same country, could not be made good from the sufficiency of others. Population in Northern Europe did little more than maintain existence through several centuries against the severity of Nature, with food scant and bad, and raiment and shelter inadequate. Of the latter fifty years of last century, at least fifteen were years of dearth in Sweden, and consequently of increased mortality.

The chief sufferers from deficient and unsuitable food are the young, their suffering having form in various ailments, and among them smallpox. I have repeatedly had to point out how smallpox is especially an affection of childhood, and how in Scotland, for instance, it used to be almost exclusively confined to the young, like measles

and whooping-cough. The like was true of Sweden; for of the deaths from smallpox from 1774 to 1708—

8·19 per cent. were under one year of age;
21·90 „ between one and three;
31·77 „ „ three and five;
23·74 „ „ five and ten;

a total of 85·60 per cent. being mere children. Or, to put it otherwise—

In 1778, when 16,607 perished, 13,096 were under ten.
1784 „ 12,453 „ 11,789 „
1786 „ 671 „ 625 „
1798 „ 1,357 „ 1,207 „

and so on.

Now, whilst I have no wish to minimise the sadness and culpability of the mortality of the young, I have yet to maintain that its consequences are by no means so serious to the State as when the heads of families and bread-winners are stricken down; and that it is a gross exaggeration to compare the fatality of smallpox with that of men slain in battle. Again, we have to recollect how many of the young die from smallpox, so to say, needlessly, from inattention and malpractice. This was clearly recognised in a Royal Letter issued from Stockholm in 1763, recommending variolation, in which the Medical Board was directed "to instruct the common people how children should be treated when suffering from natural smallpox," assigning the cogent reason, "because many more children die from want of care than from the disease." The assertion may be taken as indisputable; and, being true, it stands for the fact that the mortality from smallpox might have been largely reduced if parents had had the knowledge and the means to nurse their offspring through their illness. They died less of smallpox than of ignorant and defective treatment whilst under smallpox.

I have also to observe that smallpox in Sweden was steadily declining toward the close of the century, and that the decline continued into the present century. Taking the years in decades from 1749 to 1868, and casting the average, we have these results—

Decade.	Population.	Deaths Annually.	Annual Death-rate per 1,000.	Annual Deaths from Smallpox.
1749-58	1,821,009	50,556	27·76	6,056
1759-68	1,946,258	53,288	27·38	5,309
1769-78	2,028,141	59,262	29·22	4·535
1779-88	2,140,315	56,766	26·52	5,179
1789-98	2,246,744	57,883	25·76	3,810
1799-08	2,394,432	63,365	26·46	3,282
1809-18	2,444,568	67,537	27·63	690
1819-28	2,787,025	63,121	22·60	373
1829-38	2,976,829	70,168	23·57	633
1839-48	3,255,604	68,080	20·91	299
1849-58	3,588,571	78,218	21·80	816
1859-68	4,016,690	79,033	19·68	861

With these details before us, we are in a position to appreciate the claim made for vaccination, that it exterminated Smallpox in Sweden.

Vaccination began to be practised in Sweden in the year 1801. It was at first viewed with distrust by some of the leading medical authorities, but grew so rapidly in favour, that the medical board in 1803 ventured to make proposals for its general introduction. By Royal Letters in 1804 and 1805 measures were decreed for the encouragement of Vaccination; and in the almanacs for 1806, information and advice were inserted concerning "the new and certain means for the prevention and extirpation of Smallpox." Nevertheless, the practice made way but slowly into the confidence of the common people, and not until 1812 did a committee of the Diet go so far as to recommend its compulsory adoption. The principle of compulsion was affirmed by the Diet in 1815, leading to a Royal Decree of 6th March, 1816, whereby Vaccination was made obligatory under penalty of fine and imprisonment.

Subsequently, the law was modified, but never relaxed. Whilst the rite was obligatory, it was offered gratuitously, and public vaccinators, usually parish clerks and midwives, were appointed throughout the land, and stimulated to exertion by special rewards. Vaccination was made a condition of admission to school, and was placed by the clergy on a level with baptism and confirmation. Where-

fore, in course of time, it has come to pass that Sweden is described as "the best vaccinated country in the world."

To this result the recognised interest of the Swedish clergy in medical practice largely contributed. They were not slow to perceive a fresh line of business in vaccination. Archbishop Lindblom, among others, was extremely zealous in promoting the practice in his diocese, and from a correspondence between the Consistory of Upsala and the Medical Board, it appears that the competition between the physicians and the parsons was severe. The Consistory complained that the rewards for vaccination energy were more liberally bestowed on medical men than on the deserving clergy, and that it was unfair to insist on the clergy taking out a license to vaccinate, ending with the reproach that the mishaps of some medical men had so alarmed the people in certain districts, that very few were willing to avail themselves of the wonderful prophylactic. The Board replied, that they were aware that mistakes had occurred through the use of spurious cowpox, as proved by the outbreak of smallpox afterwards; but, at the same time, what better check could be devised on incompetent practitioners than a medical license? The right of the clergy to vaccinate was not contested, but only that they should possess some recognised qualification. The extent of the ecclesiastical operations in cowpox appears from the return of the Archbishopric of Upsala, which showed that from 1804 to the end of 1810 there were 33,298 persons vaccinated, of whom 7,025 were inoculated by clergy, 20,000 by church officers, and 6,273 by medical men and others. It was by the clergy and the doctors that the project of compulsion was initiated. In a letter from the Medical Board to the King in 1810, complaint was made that "the public in Sweden do not in all places manifest the care and zeal which might be expected from sensible and tender parents in applying for, or allowing to be applied, the precious means of salvation provided for their children's good looks and future health." In 1814, the same Board wrote that "several of the Bishops who take

the deepest interest in the spread of vaccination, have expressed their conviction that certain well-devised penalties have become as necessary as regards the ignorant masses as encouragements are useful"; and as late as 1815, the Board had to testify against the "sluggishness and indifference prevalent among the less enlightened classes.

Compulsion was, therefore, enacted in 1816 to overcome the inertia of the lower orders, the mass of the people who at all times yield the largest crop of smallpox.

"Smallpox was exterminated in Sweden by vaccination," is a common saying. Moore, in his *History of Vaccination*, published in 1817, after describing the various measures taken, observed—

> It is superfluous to add, that by such a concurrence of virtuous exertions, Smallpox was quickly suppressed in Sweden.

Ere proceeding to inquire whether smallpox was thus suppressed, I would call attention to the hands by which vaccination was administered in Sweden. It is the custom at this day to describe vaccination as a delicate operation, and to attribute subsequent smallpox to some irregularity or defect in its performance; and yet here we are asked to contemplate a whole nation delivered from smallpox, the vaccinators being chiefly priests, clerks, and midwives. What does it mean? Is it that any sort of vaccination is good when smallpox does not follow, and that any sort is bad when smallpox does follow? If smallpox had not ceased out of the land, would it then have been said, "What wonder, considering the character of the vaccinators"?

To the assertion that smallpox in Sweden was exterminated by vaccination, the answer is an unqualified contradiction. It is not true; it is demonstrably untrue. Smallpox was declining in Sweden before vaccination was heard of, and the fall continued irrespective of its influence. Look at the figures. Here we have the returns of smallpox mortality in Sweden during the last sixteen years of the past, and the first sixteen years of the current century, up to the time when vaccination was made compulsory—

Year.	Deaths from Smallpox.	Year.	Deaths from Smallpox.
1785	5,077	1801	6,057
1786	671	1802	1,533
1787	1,771	1803	1,464
1788	5,462	1804	1,460
1789	6,764	1805	1,090
1790	5,893	1806	1,482
1791	3,101	1807	2,119
1792	1,939	1808	1,814
1793	2,103	1809	2,404
1794	3,964	1810	824
1795	6,740	1811	698
1796	4,503	1812	404
1797	1,733	1813	547
1798	1,357	1814	308
1799	3,756	1815	472
1800	12,032	1816	690
Total, ...	66,866	Total	23,376

Thus we see the process of subsidence, with alternations from year to year, with the reduction of two-thirds, from 66,866 in the former to 23,376 in the latter series of years.

It will be said, of course, that vaccination was introduced into Sweden in 1801. True, but the introduction of vaccination was one thing, and its diffusion over the nation another. It was a section of the people least likely to be affected with smallpox who welcomed and practised vaccination; and however energetic and successful they might be in their promotion of the new rite, their efforts were limited to thousands among millions. All the while smallpox was declining, and they took the decline for encouragement, and began to cry out, "See! see what we are doing!" The enactment of compulsory and gratuitous vaccination in 1816 was an open confession that the lower classes remained to be dealt with, that is to-say, the very people among whom smallpox had its stronghold. There are tribes whose priests profess to bring rain, and drive away sickness with their enchantments; but if showers had begun to descend, and the sick to recover, ere their assistance was invoked, it would be

hard to convince even the credulous that the desired relief was due to their subsequent magic. But it is precisely in the subsequent magic of the vaccinators that we are asked to believe when told that vaccination drove smallpox out of Sweden. It was going out before vaccination was called in, and kept going out all the same when the vaccinators plied their enchantments. Happily, patient Nature holds her way unprovoked by human quackeries. Not even to confute impostors does she reverse for an instant her impartial operations.

But, although deaths from smallpox fell off so rapidly, there was no correspondent improvement in the public health. Smallpox was merely replaced by other forms of disease. Thus, the death-rate of Sweden per 1,000 for seventy years, stands as follows—

Decade.	Deaths.	Decade.	Deaths.
1749—1758	27·76	1789—1798	25·56
1759—1768	27·38	1799—1808	26·46
1769—1778	29·22	1809—1818	27·63
1779—1788	26·52		

Moreover, smallpox mortality, whilst rapidly decreasing before the enactment of compulsory vaccination, has since been slowly increasing. Thus—

Years before Compulsion.	Average annual smallpox mortality.	Years after Compulsion.	Average annual smallpox mortality.
1756—1775	5,480	1816—1835	450
1776—1795	4,617	1836—1855	577
1796—1815	2,303	1856—1875	1,031

We therefore see that while Jenner and his friends were boasting of their achievements in Sweden, they had to account for the fall in smallpox before their intervention, and for its continued decline ere their intervention was operative; and, moreover, to answer the question, What is the profit of salvation from smallpox if death ensue from other causes? It is, however, to be observed that such large considerations were outside the scope of Jenner's intelligence. *There was* smallpox, and *there was* vaccination, *his* invention, the infallible preventive of smallpox, and he saw nothing beyond. His self-love was implicated in the defence of vaccination, and any story

in its favour was accepted as true, and proclaimed abroad, whilst anything to its discredit was resented as a personal affront, or denounced as wilful and diabolic falsehood. As for statistics, he had no capacity. Baron says, "Neither Dr. Jenner's previous education nor his habits gave him a relish for any of the branches of pure science; and he seemed to have a peculiar horror of arithmetical questions, and was often jocular on this defect in his nature."* This inability to calculate goes far to account for the absurdity of many of his statements concerning the miraculous effects of vaccination among populations where only two or three per cent. had been operated upon; and who, therefore, must have vicariously delivered the remainder from smallpox. To an intellect thus defective, the introduction of vaccination to Sweden was the vaccination of the Swedes; the decline of smallpox was its suppression; and its suppression was the consequence of vaccination. But the excuse that is available for Jenner does not serve those who cannot plead his congenital defect, and are satisfied to repeat his preposterous assertions.

Smallpox kept declining in Sweden until the decade (1841-50) when the annual average of deaths per million fell to 212. The variations in the mortality in single years are remarkable. Here are thirteen years when the deaths were under a hundred—

1821 37	1843 9	1847 13
1822 11	1844 6	1848 71
1823 39	1845 6	1855 41
1829 53	1846 2	1856 52
1842 58		

On the other hand, here are eighteen years when the deaths were over a thousand—

1825 1,243	1851 2,488	1867 1,061
1833 1,145	1852 1,534	1868 1,429
1834 1,049	1858 1,289	1869 1,474
1838 1,805	1859 1,470	1873 1,122
1839 1,934	1865 1,336	1874 4,063
1850 1,376	1866 1,217	1875 2,019

* Baron's *Life of Jenner*, vol. ii. p. 293.

The death-rate from smallpox, which fell to 212 per million in 1841-50, rose to 862 per million in 1851-60, to 867 per million in 1861-70, and, owing to the epidemic of 1873-74, the worst in Sweden since 1801, the last decade, 1871-80, will exhibit a higher average.

In presence of these statistics, it is fair to repeat the inquiry, "Why was smallpox declining before vaccination was introduced; and why has smallpox revived and increased in 'the best vaccinated country in Europe'?"

Again, too, I must call attention afresh to the fact of the irrelevant influence of smallpox upon the national mortality. Mr. P. A. Siljeström has published a diagram of the course of mortality in Sweden from 1774 to 1878, with the part smallpox has played in that mortality, from which it is manifest (to all who choose to use their own eyes) that the action of smallpox as a destroyer of life has been wildly exaggerated.* Bad years of smallpox are not years of a high death-rate, nor are years with little smallpox years of a low death-rate. When smallpox is prevalent it appears to replace other forms of disease, and when not prevalent, to be replaced by diseases of greater fatality. Wherefore, argues Mr. Siljeström—

> Of what use is it to the public that a smaller number of citizens die annually from Smallpox (supposing that this result is brought about by Vaccination), if an equally large number, nevertheless, die from other diseases? We can see no further advantage in it than there would be in a battle, if none of the men fell before the fire of the artillery, but all the more died from the fire of the line. To the individual it may possibly be more agreeable to die of any other disease than Smallpox, and it ought, therefore, to be allowed to everyone to save himself, through Vaccination, or any other lawful means, from an eventuality which he fears; but this cannot possibly, in itself, be regarded as the business of the State.

Sweden is a large country, and its diseases must be subject to many local variations; but Stockholm, representing a compact population, exhibits much the same phenomena. In some years of last century the city was

* *Tables relative to Vaccination in Sweden, 1774-1778.* London Society for the Abolition of Compulsory Vaccination.

severely afflicted with smallpox, as the deaths in these years show—

1778 639	1784 411	1795 447
1783 714	1787 414	1800 703

These years were the worst; there were variations such as these—

1780 14	1785 20	1797 13
1782 12	1793 22	1798 12

As in Sweden at large, so in Stockholm, a fall in smallpox had set in, and was continued into the new century, until years appeared without a single death; for which vaccination had the credit, and the disease was proclaimed "stamped out," none dreaming of reverse ahead. By and by it began to revive, and deaths were thus registered—

1857 319	1866 157	1871 113
1865 273	1870 96	1873 191

And then came the dreadful epidemic of 1874, when 1,191 perished, and 317 in 1875.

Thus, in two years, 1,382 perished in a population of 150,000—a death-rate of 7,916 per million—against 2,430 per million in London during the memorable epidemic of 1871; the severest outbreak of smallpox in the century in "the best and most vaccinated population in Europe!"

Under examination, the case for vaccination in Sweden altogether disappears. By Mr. P. A. Siljeström the examination has been conducted with a precision, a thoroughness, and a judicial temper that leave nothing to desire. His treatise was translated into English by Miss Frederica Rowan, and published in 1875, under the title of "The Vaccination Question: an Essay towards determining the Boundaries within which a Scientific Theory may rightfully claim to have effect given it by Legislation;" and a skilful abridgment was produced by Prof. F. W. Newman; but the original, which extends to no more than 104 pages, should be studied by whoever is seriously interested in the vaccination question. Sweden, through the possession of a long series of vital statistics, offers special facilities for a comprehensive study of the phe-

nomena of smallpox; and in Mr. Siljeström's treatise, we have veracity with good sense, and science with philosophy, instead of the inadequate and catchpenny stuff current in this country as "truth about vaccination."

In Finland, the story of vaccination is much the same as in Sweden, with the difference that there was no natural subsidence of smallpox to be placed to its credit. Wherefore, as concerns Finland, it is the habit of vaccinators to preserve a discreet silence, the facts not tending to edification in the Jennerian faith.

A curious evidence of the simple trust with which the cowpox revelation was received in certain countries, is found in an ordinance issued in Finland constituting smallpox after vaccination a proof of imposture on the part of the vaccinator. The ordinance ran thus—

> That the Inoculator or Vaccinator whose patients, within a shorter or longer time after having by him been inoculated or vaccinated, shall prove to have been attacked by natural Smallpox, with deadly result or other serious consequence, shall without pardon be declared unworthy of all further right to reward or confidence, and morever, be impeached for due punishment on account of dishonest and unprofessional behaviour.

Under such a law (no severer than many which enact punishment where the buyer does not obtain from the seller what he gives his money for) how would it fare with the legion who now practise vaccination? But I am reminded that vaccinators no longer undertake to preserve their patients from smallpox, but only to keep it off until it comes, and then to make it milder.

Vaccination was introduced to Denmark at the same time as Sweden, and was made compulsory in 1810. As in Sweden, smallpox was falling off, and, as in Sweden, the vaccinators were loud in their outcry over their success; but their claim was absurd. The population of Denmark in 1801 was 925,680, and up to 1810 no more than 118,782 persons had been vaccinated, whilst the births during the same period were 283,905. It was, therefore, assumed that the vaccination of less than a tenth of the population in eight years had reduced and

extinguished smallpox among the unvaccinated nine-tenths! Where there is a disposition to believe, anything may pass for credible.

Subsequently to 1801 there was little smallpox in Copenhagen, and from 1811 to 1823 not a death from the disease was recorded; but in 1824 smallpox reappeared; and in 1835 there were 434 deaths in the city; when it began to be admitted that vaccination did not prevent smallpox, and that revaccination was necessary for complete protection; but, if requisite, how was the miraculous extinction of the disease by the primary vaccination of less than a tenth of the population in the early years of the century to be accounted for?

Here we have the record of Copenhagen smallpox for seventy-five years, 1801-75—

Years.	Deaths.	Annual Average.	Years.	Deaths.	Annual Average.
1801-10	639	64	1841-50	245	24
1811-20	—	—	1851-60	160	16
1821-30	119	12	1861-70	168	16
1831-40	568	56	1871-75	518	103

Thus the number of deaths in the five years, 1871-75, was nearly equal to the deaths in the preceding thirty years, 1841-70; whilst at the same time the more or less smallpox had no apparent influence in raising or lowering the general mortality.

Iceland, as a dependency of Denmark, is often cited as evidence for the virtue of vaccination. Speaking in the House of Commons recently, Mr. T. W. Evans proclaimed, "Vaccination has extinguished smallpox in Iceland! There has not been a case in the island for thirty years." Could aught be more conclusive? and the assertion is re-asserted with triumph: yet, under examination, we shall see the statement and the inference vanish like smoke.

First, the absence of smallpox from Iceland for series of years was nothing uncommon. Iceland's history is singularly copious and accurate; and from Schleisner's *Iceland from the point of view of Medical Science,*

Copenhagen, 1849, we have the following list of smallpox epidemics during five hundred years—

1347—A great epidemic.
1380—Ditto.
1430—Terrible epidemic—8000 deaths.
1511—A great epidemic.
1555—Ditto.
1574—Ditto.
1580—A kind of variolous disease.
1590—Smallpox epidemic.
1616-17—Ditto by importation.
1632—Smallpox epidemic.
1636—Ditto.
1655—Ditto.
1658—Ditto.
1670-1—Varioloid and Smallpox.
1707-9—A dreadful epidemic by importation — 18,000 died.
1742—A small epidemic from case brought in Dutch vessel.
1762-3—A mild epidemic.
1785—A small epidemic—73 deaths.
1786—Epidemic—1237 deaths.
1787—Epidemic—113 deaths.
1839-40 — Smallpox again brought to Iceland, but prevented from spreading by strict quarantine.

From this list it will be seen that for centuries Iceland has had long terms of immunity from smallpox. Thus—

Dates.			Immunity.	Dates.			Immunity.
1347	to	1380	33 years.	1671	to	1707	36 years.
1380	,,	1430	50 ,,	1709	,,	1742	33 ,,
1430	,,	1511	81 ,,	1787	,,	1839	52 ,,
1511	,,	1555	44 ,,				

Inasmuch then as vaccination could have nothing to do with the years of immunity in former times, on what ground of reason can vaccination be set forth as the cause of immunity at this day? Schleisner observes—

Since 1306 Smallpox has been epidemic in Iceland nineteen times, and has always been brought in either by French, English, Dutch, or Danish ships. In early times it frequently caused a terrible mortality, as in 1707, when 18,000 out of a population of 50,000 perished; and in 1430, when 8000 are said to have died. In later years its violence has diminished *in consequence of the introduction of Vaccination*. In 1785-6-7, its last attack in the eighteenth century, only 1425 persons died.

Very good; but in 1785-87, vaccination was unknown; and as the epidemics of 1742 and 1762 are recorded by Schleisner as "small" and "mild" respectively, while so early as 1580 one is described as "a kind of variolous

disease," it is evident that vaccination could have as little to do with making "smallpox milder" as with the long terms of immunity which Iceland has enjoyed.

In an appeal by Mr. William Morris on behalf of the Icelanders, threatened with famine in 1882 he observed—

> Lastly, the Measles, which has not been in Iceland for thirty-six years, and which falling on a people not used to it, is a deadly and not a trivial disease, has attacked Reykjavik, where half the people are down with it, and many have died, and it is now spreading over the island.

Measles absent from Iceland for thirty-six years! Supposing there were some dodge against measles corresponding to vaccination against smallpox, would not the exemption in every year up to the thirty-sixth have been ascribed to its efficacy?

Dr. Garth Wilkinson relates that in 1866 when standing on the Lawrock, where the Althing was held, Dr. Hjaltalin, Medical Inspector of Iceland, told him—

> When, in 1000 A.D., Christianity was first introduced into Iceland, the heathen party in the Althing credited the wrath of their gods with a volcanic eruption which broke out on a neighbouring farm. Snorri, the great Icelandic historian, being present, asked, "What then was it that made the gods angry when the older lava was on fire?" It clearly was not Christianity then. He carried the day against the gods by this common-sense question, and Christianity became the law of the land.
>
> Somewhat parallel with this history is the claim made for the extirpation of Smallpox by Vaccination in Iceland. It is a case of *ante hoc* pricking the windbag of *post hoc*, and, *à fortiori*, of *propter hoc*.*

Whilst thus the Icelandic Vaccination Bubble is burst, it remains to be observed that if vaccination had saved the Icelanders from smallpox it could only have been vicariously—as in so many instances of similar salvation; for during the first half of the present century no more than 17,072 vaccinations were effected in a population of between fifty and sixty thousand in the flux of birth and death. The vaccinations are thus recorded—

* *Vaccination Tracts*, Part III. No. 14. London, 1878.

Years—1804-15		Vaccinations—	1345
„	1816-30	„	10,386
„	1831-37	„	None.
„	1838-50	„	5341
		Total, ...	17,072 *

There is much of the like order of "facts in favour of vaccination" current concerning other European populations, which only pass muster because they are rarely subjected to criticism; because vaccination is considered such a benign invention that to question its credentials is wicked; and because it is held that if even some of the claims made for it are touched with fable, yet their effect on the popular mind is so clearly for good in inspiring confidence and overwhelming occasional mishaps, that it is inexpedient to be over-scrupulous. But, however instructive and wholesome may be the exposure of such sophistications, it is necessary to restrain ourselves, and for the remainder of my Story we shall keep to English ground.

From the preceding details we see how far vaccination in Sweden, Denmark and Iceland fell short of the claims made for it by Jenner and his successors. Jenner, it is true, died in 1823, before the more pronounced refutations of his assertions had been evolved, but, as said, it is questionable whether he ever realised that the names of countries stood for millions of men, women and children whose vaccination could only be overtaken by organised exertion in the process of years. His various boasts, therefore, of vaccinated nations and exterminated small-pox are to be taken as proofs of defective arithmetical capacity and of that scientific imagination which runs with possibility and matter-of-fact.

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* *Report on the Vaccination Act* (1867) *from the Select Committee of the House of Commons*, 1871. P. 414.

CHAPTER XXXII.

NEWCASTLE SMALLPOX: A COMMON STORY.

To examine the statistics of the larger English towns in order to determine whether vaccination has had any influence on the abatement of smallpox, would involve us in discussion interminable. For our immediate purpose it may suffice to select three examples; 1st, NEWCASTLE-ON-TYNE, as an instance of a common story; 2nd, NORWICH, as an instance of a smallpox epidemic; and 3rd, GLASGOW, as an instance of smallpox displaced and replaced as a factor of mortality.

THE NEWCASTLE DISPENSARY.

We often hear of "the statistics of the Anti-Vaccinators;" to which the summary answer is that Anti-Vaccinators have no statistics. Their statistics are the statistics of the Vaccinators, in which they provide the material for their own condemnation; which is probably the reason why the so-called statistics of the Anti-Vaccinators are so intensely disliked, avoided, and unanswered.

The Newcastle Dispensary in 1877 completed its hundredth year, having been founded in 1777, and Dr. Monteith prepared a concise history of the institution, which was published in 1878 by order of the Committee.* The report is especially valuable as a record of the comparative incidence of disease in a large industrial population, where, if anywhere, smallpox might be expected to show itself in severe form. In 1781 the population of Newcastle was estimated at 23,000; in 1821 it had risen to 41,794; in 1851 to 87,784; and in 1871 to 128,443; and through all these years and changes, the Dispensary

* *Report of the Newcastle Dispensary, from its Foundation in* 1777. Printed by order of the Committee. Newcastle-upon-Tyne, 1878.

continued in active operation, the percentage of the patients to the population being maintained with remarkable uniformity. It is needless to add that the majority of the patients have been from the ranks of the poor, among whom smallpox has always its chief seat. As Dr. Monteith observes—

> They are the class intermediate between the well-to-do workingman and the pauper. The state of distress in which these people continually live is known to few. The patient, when visited by the doctor, is usually found lying in "poverty, hunger, and dirt," and the treatment of the cases is undertaken in circumstances very unpropitious to success. Medical advice and medicine are not the only things needed. Good food, warmth, and judicious nursing are imperatively required, and are seldom if ever attainable.

Before turning to the Dispensary's record of a century of smallpox, it may be well to observe that Variolation was practised in Newcastle with great assiduity, and that the Dispensary took a lead in the business, the surgeons inoculating any one who applied. Dr. Monteith relates—

> By the year 1777 the arguments in favour of Variolation had so far triumphed over the habits and prejudices of the profession that there is no instance mentioned in our reports of any medical man in Newcastle opposing it. It is always spoken of as one of the best established facts of medical science. With the general public the case was different. Their prejudices were as strong as ever, and they exhibited a horror of Variolation which would satisfy the most ardent Anti-Vaccinator. To combat these prejudices various means were tried—sermons from the pulpit, pathetic exhortations in the newspapers, etc. The last and most convincing argument consisted of a pecuniary reward to parents who should allow their children to undergo the operation. The sum offered was 5s. for one child, 7s. for two, 9s. for three, and 10s. for four, and upwards. The success of this expedient was remarkable. Parents came flocking in with their children in great numbers. Tempted by the rewards, they subjected their little ones to an operation which, unless their sentiments had greatly altered, they believed to be barbarous and hurtful in the extreme, and a clear temptation of Providence. Variolation on these terms commenced in the spring of 1786; and every year thereafter, until 1801, children were operated on at the Dispensary at the rate of over 200 per annum. In 1801 there had been in all 3,268 operated upon.

As soon as Vaccination came into vogue, Variolation was denounced as the chief cause of the existence of smallpox. It was said that what was done to avert the disease from the individual diffused it among the multitude. Vaccinators long maintained that they could easily exterminate smallpox, if only Variolators would refrain from keeping it alive. Variolation gradually ceased, and was formally prohibited in 1840, and by and by Vaccination was made compulsory. Nevertheless, the confident prophecy of the Vaccinators remains unfulfilled, for smallpox is not exterminated.

The change from Variolation to Vaccination at the Newcastle Dispensary was immediate. Dr. Monteith says—

> It is creditable to the good sense and enlightenment of the Dispensary authorities that they *at once* abolished Inoculation of Smallpox, and substituted Vaccination in its stead. In 1801, the first year, 215 children were vaccinated. The annual number rapidly rose until it reached its maximum in 1813, when 1,874 were vaccinated, after which the numbers as rapidly declined.

For this decline various reasons were assigned, such as the increase of the private practice of vaccination, and the disposition to undervalue every benefit, however great, that is purely eleemosynary. It is forgotten that Vaccination fell off as its illusory character became more and more manifest, and as the promises made on its behalf were, one and all, indisputably belied. When Jenner died in 1823, he passed away amid indifference, if not contempt. His bubble had burst. The furore for vaccination witnessed in the present generation is by no means a continuation of the original furore. That passed away. Our furore is a revival, dating from the popularity of sanitary reform, to the back of which a new generation of medical men contrived to attach vaccination!

In the hundred years, 1777 to 1877, the Dispensary had to deal with 2,616 cases of smallpox, of which 428 terminated fatally, which as to years and mortality may be thus classified—

Years.	Cases.	Deaths.	Mortality per 100.
1777 to 1802 ...	365	90	24·6
1803 ,, 1827 ...	273	57	20·8
1828 ,, 1852 ...	925	152	16·4
1853 ,, 1877 ...	1,053	129	12·25
	2,616	428	16·3

The progressive reduction in mortality is, of course, ascribed to vaccination having made the disease milder; though the report informs us that "the mortality from smallpox reached its highest point—33·3 per cent. in the five years from 1802 to 1807," the very time when enthusiasm in favour of the Jennerian rite was at its acme. We, on the other hand, would attribute the lower mortality, as did Dr. Andrew Combe, to better modes of treatment, even neglect being preferable to much of the old-fashioned regimen for smallpox. Considering the figures, Dr. Monteith observes—

> Of Smallpox I desire to speak with circumspection, for in Newcastle Anti-Vaccinators are somewhat rampant. Figures, however, are stubborn things, and their import is not easily explained away. Like the vast majority of medical men, I have always firmly believed in the good results of Vaccination. Without admitting that my faith has been shaken by considering these statistics, I must confess that I have been a good deal disappointed with them. I had expected to find this terrible disease regularly decimating the population every year until the epoch of Jenner's discovery, and afterwards diminishing, rapidly and steadily, almost to nothing. These figures do not warrant us in taking so sanguine a view of the matter.
>
> Whilst, therefore, we observe considerable improvement in the figures, I am of opinion that they leave us in this dilemma—either that there now exists a grossly exaggerated impression of the prevalence and fatality of Smallpox in former times, or else that they had begun to decrease long before the discovery of Vaccination, the beneficial effects of which must, therefore, have been at least assisted by other causes.

Here we have an honourable confession from out the bonds of professional prejudice, and a reluctant exposure of the legend of a world decimated by smallpox, and ceasing to be decimated after the advent of Jenner. There is nothing singular in the Newcastle evidence that

has awakened distrust in the mind of Dr. Monteith. Similar evidence is found wherever facts are available. The legend to the contrary has become established, like many other legends, by dint of repetition, until those who venture to question it are regarded with suspicion and dislike.

The Report of the Newcastle Dispensary illustrates another truth, namely, that the abatement or cessation of smallpox is by no means equivalent to a reduction of death; that evil conditions of life remaining unchanged, a fall in smallpox is compensated for by a rise in some cognate form of zymotic disease. Thus Dr. Monteith remarks:

> It is generally said by the opponents of Vaccination that the other exanthemata have increased since its introduction. It must be allowed that our figures (probably unreliable as general data), give some support to this supposition. The proportion of cases of Scarlatina in the five years, 1827-32 was 4·3 per cent. It has never reached that high limit since; but the percentage has never fallen below 2 in the last thirty-five years. Mortality has also increased to an alarming extent. At one time so low as 2·5 per cent., it has amounted to 17 per cent. in the last five years. Scarlatina is now by far the most fatal disease on the list, with the exception of Consumption.

Of Scarlatina, the Dispensary record stands thus—

Years.	Cases.	Deaths.	Mortality per 100.
1777 to 1802	355	33	9·3
1803 ,, 1827	795	30	3·7
1828 ,, 1852	1,856	155	8·3
1853 ,, 1877	3,659	567	15·5
	6,665	785	11·7

Of Measles it is said, "the disease has somewhat increased in numbers, whilst the proportion of deaths to cases has not varied much." Thus the record stands—

Years.	Cases.	Deaths.	Mortality per 100.
1777 to 1802	186	16	8·6
1803 ,, 1827	435	22	5·0
1828 ,, 1852	1,572	83	5·2
1853 ,, 1877	2,537	123	4·8
	4,730	244	5·1

Of Whooping Cough it is observed—

The death-rate in former years fluctuated widely. At present it appears to remain stationary at a figure somewhat above the average of the century. There is a common impression that Whooping Cough is a disease of little danger and no importance, but the following table shows that of late years it has been more fatal than Smallpox or Measles.

Years.	Cases.	Deaths.	Mortality per 100.
1777 to 1802 ...	245	22	9·0
1803 ,, 1827 ...	220	23	10·4
1828 ,, 1852 ...	743	112	15·0
1853 ,, 1877 ...	1,716	241	14·0
	2,924	398	13·6

Smallpox, Scarlatina, Measles, and Whooping Cough may be regarded as convertible forms of infantile zymotic disease. Conditions of existence remaining equal, one may be the substitute of the other, maintaining thereby a common death-rate. Diarrhœa is sometimes placed in the same category; and, like erysipelas, it is to a large extent a consequence of vaccination. It should never be forgotten that vaccination induces a constitutional disturbance or fever, which illness is offered to Nature as a propitiation for smallpox; with which propitiation, say the vaccinators, Nature is satisfied, and withholds the infliction of smallpox. Vaccination, as an illness, however, is frequently attended with diarrhœa, and the increase of that affection, *pari passu*, with the increase of infant vaccination, is marked. Thus stands the record of Diarrhœa—

Years.	Cases.	Deaths.	Mortality per 100.
1777 to 1802 ...	1,390	67	4·8
1803 ,, 1827 ...	1,529	7	·4
1828 ,, 1852 ...	3,995	43	1·0
1853 ,, 1877 ...	6,117	362	5·9
	13,031	479	3·6

Dr. Monteith observes—

The mortality from Diarrhœa is unfortunately steadily increasing, the percentage for the last five years, 1872-77, being the highest on record—viz., 14·4. The majority of the deaths takes place among infants; and the disease is produced in most cases by the

ignorance or carelessness of mothers in giving them food which is not fit for them. But why this should be the case now any more than it was twenty or fifty years ago, I cannot understand. An increased consumption of alcoholic stimulants in later times has been suggested to me as an explanation.

Any explanation is welcome that will preserve vaccination from reproach, yet what medical man is ignorant of the fact that diarrhœa is one of the commonest sequences of vaccination? Nature thus endeavouring to throw off the effects of the virus infused into the blood.

Taking, then, these five diseases in the order of their mortality, they range thus—

		1777-1802	1803-1827	1828-1852	1853-1877	Total.
Scarlatina,	Cases,	355	795	1,856	3,659	6,665
	Deaths,	33	30	155	567	785
Diarrhœa,	Cases,	1,390	1,529	3,995	6,117	13,031
	Deaths,	67	7	43	362	497
Smallpox,	Cases,	365	273	925	1,053	2,616
	Deaths,	90	57	152	129	428
Whooping-Cough,	Cases,	245	220	743	1,716	2,924
	Deaths,	22	23	112	241	398
Measles,	Cases,	186	435	1,572	2,537	4,730
	Deaths,	16	22	83	123	244

In the course of a century the Newcastle Dispensary had dealt with a total of 250,637 cases, of which no more than 2,616 were of smallpox, or about 1 in 96. The total deaths during the century were 14,088, of which no more than 428 were due to smallpox, or about 1 in 33; whilst from scarlatina they were 1 in 18, from diarrhœa 1 in 30, and from whooping-cough 1 in 35. It may be said, the record of the Dispensary does not account for the population of Newcastle. True; but it accounts for the lower strata of the population, and, therefore, for an excessive proportion of smallpox. The complete statistics of the city would exhibit smallpox as a still lighter affliction. And, we repeat, there is nothing singular about the record of the Newcastle Dispensary. It is a common story. Whenever we get out of the region of romance, and tread the ground of matter-of-fact, it is to discover that the wilder horrors and ravages of smallpox have been originally evolved from imagination, and are perpetuated in ignorance from hearsay.

CHAPTER XXXIII.

THE NORWICH EPIDEMIC—1819.

I HAVE repeatedly cautioned my readers against the common assumption that the London smallpox of last century was the measure of English smallpox. It was not so. Smallpox was endemic in London, whereas it occurred as an occasional epidemic in other English towns, and was almost unknown in many rural districts. Moreover, the disease was not allowed to die out, but was diligently cultivated and diffused by variolation. As vaccination was introduced, the practice of variolation correspondently ceased, and with its cessation there was an abatement of smallpox, which abatement was unwarrantably ascribed to vaccination. How much of the smallpox of last century was due to variolation it is impossible to determine; nor would it be safe to accept the assertions of the early advocates of vaccination on the point. I apprehend that if smallpox were something desirable which everyone was intent on catching, it would be discovered that it could not be universally caught, and that its propagation had definite limits; and it is not improbable that among Londoners the limit of propagation was closely approached, so that nearly all who were susceptible contracted the disease. What, however, I wish to enforce is, that the decline in the prevalence of smallpox in some places coincidently with the introduction of vaccination was largely due to the discontinuance of smallpox culture, and that the suppression of that culture would have given the same result. Nor let it be forgotten that an almost world-wide fall in smallpox had set in toward the close of last century, which the vaccinators attributed to their prophylaxy in the nineteenth. Miraculous effects are frequently asserted where miraculous causes would be disowned.

The vital statistics of last century are, to a great ex-

tent, the products of inference and conjecture, and more or less affected by the purpose and bias of their collectors; but if even we had the correct mortalities of smallpox in the chief centres of population,—such as York, Hull, Norwich, Chester, Coventry, Bath, Bristol, Exeter, and Plymouth—we should still be puzzled to separate what was due to insanitary conditions of life from what was due to the artificial induction of the disease by variolation. It has been said that the 18th Century did not terminate in England until 1830; and accepting that liberal allowance, we may resort to an interesting record of a virulent epidemic in Norwich in 1819 for some light on the character and incidence of urban smallpox prior to the rise of such great communities as Liverpool, Manchester, Leeds, Sheffield, and Birmingham. The account of the epidemic was written by John Cross, a surgeon practising in Norwich.*

In those days Norwich contained a population of about 40,000. The city was accounted salubrious, and smallpox was little known. Cross writes that "in 1805, *after being for a time almost extinct,* smallpox prevailed so much in Norwich as to excite some attention." The attention excited led to an attempt to introduce vaccination. A meeting was held in the Guildhall, 16th July, 1805, "to concert measures for the extermination of the disease," and resolutions were passed to discourage inoculation with smallpox, and "to substitute immediate and universal vaccination of the inhabitants of the city and its hamlets." This outbreak of smallpox and vaccination appears to have subsided together, for Cross continues—

> After being absent for a year or two, Smallpox was again introduced to Norwich by an individual from London, and spread so

**A History of the Variolous Epidemic which occurred in Norwich in the year 1819, and destroyed 530 Individuals; and an Estimate of the Protection afforded by Vaccination, and a Review of Past and Present Opinions upon Chickenpox and Modified Smallpox.* By John Cross, Member of the Royal College of Surgeons in London. London, 1820. Pp. 296

extensively among those whose obstinacy or whose prejudices made them resist Vaccination, that 203 deaths from Smallpox were recorded in the Bills of Mortality between 1807 and the end of 1809. Smallpox again appeared in 1813, in which year 65 deaths took place; the mortality being confined to so small a number by the early and extensive adoption of Vaccination before the danger was actually at hand. From the year of 1813, it may be said, there was no Smallpox in Norwich until the rise of the epidemic which I propose to describe. Not a death from the disease was noticed for four years. Indeed, the only case that came to my knowledge, during the time specified, was the servant of a celebrated public character, who, being seized with Smallpox, was detained in Norwich, but from whom, so far as I could learn, the contagion did not extend.

I shall presently refer to the number of vaccinations effected in Norwich, and to their influence in arresting smallpox. What I would now draw attention to is, the comparative rarity of smallpox in Norwich in those times. Years two, three, and four elapsed without a single death from the disease! How does such a fact accord with the common-place of vaccinators, that before the advent of Jenner the people of England were decimated with small-pox, and that 40,000 perished annually? When we press for evidence for these extraordinary statements, we either get no answer, or we discover that the mortality of a bad year of London smallpox has been multiplied by the population of the United Kingdom, thus yielding the astounding total of 40,000 victims. Our reply is, that there is no warrant whatever for this conversion of London mortality into national mortality; that London was unique in its circumstances; and that, setting the immense rural majority aside, even in the largest cities, such as Norwich, years passed without any deaths from smallpox.

Vaccination had the prestige of fashion, and the leading citizens of Norwich were philanthropic and scientific after the newest lights, and whatever was accounted "proper," they were intent to effect. To have the vulgar vaccinated was, however, no easy matter. Many declined because they had no fear of smallpox. What, indeed, had they to be alarmed about? Moreover, as experience

advanced, the futility and danger of the new inoculation became more and more apparent. It began to be known that it not only failed to avert smallpox, but it frequently induced serious illness, permanent injury, and sometimes death. It is to be remembered that the symptoms of vaccination were watched at the outset of the practice with keen attention, and that the general verdict, especially of mothers, was distinctly adverse to its harmlessness. That such was the common judgment was manifest from the rapid decline of the early furore in its favour, and its contemptuous neglect by the mass of the people until revived and enforced by legislation. As the citizens of Norwich would not be vaccinated, it was determined to try the effect of bribery, and surgeon Rigby in 1812 induced the court of guardians to offer a reward of 2s. 6d. to every person "who should bring a certificate from a surgeon of having gone satisfactorily through the cowpox." The results of this bribery are set forth as follows by Cross—

511	received the award in		1813	49	received the award in		1817
47	,,	,,	1814	64	,,	,,	1818
11	,,	,,	1815	1402	,,	,,	1819
348	,,	,,	1816				

The larger numbers in 1813, '16, and '19 were due to panic and pressure; but the figures may be taken for a graphic representation of the distrust with which vaccination was regarded after ample experience. Of course many were vaccinated who did not claim the parish half-crown; and at the end of 1819 it was calculated that 10,000 in Norwich had submitted to the Jennerian rite from the date of its introduction at the beginning of the century. Thus considerably less than a fourth of the inhabitants were what is called "protected."

We now come to the narrative of that great outbreak of smallpox, which, says Cross, destroyed more lives in less time in Norwich than any epidemic since the Plague. It is almost superfluous to state that the disease did not originate in Norwich: it never appears to originate anywhere: it was imported. A girl travelling with her

parents from York caught the infection in transit at a market-town, and as soon as she arrived in Norwich was laid up with the disease.

This happened [says Cross] in the latter end of June, 1818; and the earliest cases of Smallpox that were seen by any medical man were traced to this origin. I have been able to ascertain the different families by which the disease was kept up during the remainder of that year, but it extended to very few, and proved fatal in only two instances. A druggist inoculated three children in January, 1819, thus helping in a small degree to spread the contagion, which the season of the year was calculated to keep within narrow bounds. Still no alarm was excited; a single medical man only was acquainted with the disease; and the cases of Smallpox were so few until the latter end of February as to be scarcely noticed. At this time, however, the disease extended from one of our greatest charity schools to all quarters of the city. . . . Comparatively dormant during the winter, as the season became milder it burst upon us suddenly and unexpectedly, continuing its work of devastation for three or four months with undiminishing fury. The following list of burials taken from the Bills of Mortality will give a sufficiently accurate idea of the advance and decline of the disease—

1819.	Deaths from Smallpox.	Deaths from other diseases.	Total of deaths.
January,	3	61	64
February,	0	71	71
March,	2	68	70
April,	15	61	76
May,	73	63	136
June,	156	70	226
July,	142	61	203
August,	84	63	147
September,	42	96	138
October,	10	63	73
November,	2	62	64
December,	1	83	84
	530	822	1352

The greatest mortality occurred in June when 43 were buried from Smallpox in one week. The rapid declension of the disease from that period is obvious from the above table; and it was so nearly extinct at the end of the year, that I could not find a variolous patient from whom ichor could be procured for an important experiment. As probably one in six of all who were affected by the epidemic died of it, I am convinced it is not far from the truth to assert that considerably over 3000 individuals, or a thirteenth part of the whole population of Norwich, had Smallpox in the year 1819.

It is always sound policy to take what is considered the case against us at its worst; and as this dreadful Norwich epidemic is cited as evidence of what is possible in the absence of vaccination, and as something that opponents of vaccination should regard as conclusive against them, there is cause to give it special attention; and the more so as the leading facts are well ascertained. First, however, I would remark that I have no desire to minimise the horrors of smallpox: it is a loathsome, and, because preventible, a discreditable disease: but neither let us maximise its horrors, but try, at least, to recognise facts in their true dimensions.

Five hundred and thirty died in Norwich of smallpox in 1819 of 3000 supposed to have had the disease, the deaths being, as commonly estimated, one in five or one in six of those affected. The deaths from all diseases in Norwich in 1819 were 1352—a mortality of 30 per 1000; a high rate, but by no means uncommon in urban populations free from smallpox. I have next to observe that if 3000 had smallpox, there were 37,000 who escaped, and to ask, How did they escape? By what means were they protected? It may be replied that a fourth of them were vaccinated; but how does that account for the immunity of 30,000 unvaccinated? The 10,000 vaccinations reputed to have been effected in Norwich from the beginning of the century were the work of nearly twenty years, and the major part of them in 1819 must have been represented by adults practically out of the range of infection, protected not by vaccination, but by their years.

"Protected by their years! What do you mean?" exclaims a reader.

Precisely what I say—that in the Norwich epidemic, as in variolous epidemics generally, adults are comparatively secure, and the young, and especially infants, are the victims. In Norwich, in 1819, scarcely a breadwinner, or a father or mother was laid in the grave slain by smallpox.

"It is incredible!"

It is incredible simply because the facts of smallpox are persistently overlooked. Here is proof of the incredible in a statement carefully prepared by Cross of the ages of the 530 who died in the Norwich epidemic—

Under two years of age, - - - -	260
Aged from two to four years, - - -	132
,, four to six years, - - -	85
,, six to eight years, - - -	26
,, eight to ten years, - - -	17
,, ten to fifteen years, - -	5
,, fifteen to twenty years, - -	2
,, twenty to thirty years, - -	2
,, thirty to forty years, - -	1
	530

It will be said, as a matter of course, that if these children had been vaccinated they would not have perished; but the answer is that at this day the chief mortality of smallpox is among the vaccinated young, in whom the whole virtue of the rite may be supposed to abide fresh and efficient. Cross was an enthusiastic vaccinator, but he allows, with due excuses, that the vaccinated minority contributed a certain quota to the sick and the dead, and that the ill repute of vaccination caused many in their terror to resort to variolation, and thus to incur and diffuse the mischief of which they stood in dread. Some old women and a druggist were, he says, responsible for four or five hundred of these creations of smallpox during the epidemic, "each of which became a centre of contagion."

Age, I said, constituted the chief protection from smallpox, but good houses and good fare formed another line of defence. "The effects of the Norwich epidemic were confined *almost exclusively*," says Cross, "*to the very lowest orders of the people.*" Moreover, he observes—

The disease was often aggravated, and made to assume its worst characters, by the most injudicious treatment. The prejudiced and most ignorant being the principal sufferers, the prescriptions of old women were more listened to than the advice of medical men. A practice kept up by tradition among the poor of the city

for above a century was revived, in spite of all remonstrance, as follows—

"At the commencement, to set the object before a large fire and supply it plentifully with saffron and brandy to bring out the eruption; during the whole of the next stage to keep it in bed covered with flannel, and even the bed-curtains pinned together to prevent a breath of air. To allow no change of linen for ten or more days, until the eruption had turned; and to regard the best symptom to be a costive state of the bowels during the whole course of the disease."

Such were the means by which the horrors of the epidemic were aggravated. The old nurses triumphed not a little in having an opportunity of showing their skill after it had been so long unexercised; nor was it often easy, among the deluded persons in whose families this affliction occurred, to persuade or compel them to adopt a different plan of treatment.

Cross described several cases in which unquestionable vaccination had been followed by unquestionable smallpox. In one instance, a girl of eleven years of age, correctly vaccinated in both arms, perished of malignant smallpox, whilst her unvaccinated brother, six years of age, recovered from a severe attack. Such cases in 1819 were treated as exceptional, but they have long passed into the category of matter-of-course, and ceased to excite observation or surprise.

Such was the memorable Norwich epidemic. However dreadful, it was in no wise extraordinarily dreadful. If the death-rate was raised for a single year, it would be reduced in subsequent years, and the average rate recovered that accorded with the common obedience of the community to the laws of health. In Nature consequences are equal, and any temporary aberration is in the long run compensated for. If vaccination could have kept smallpox from Norwich, the citizens would have had in some other form the measure of disease that pertained to their way of life.

We might, moreover, inquire, whether to escape an epidemic, severe as that of 1819, it would have been economical to put 40,000 people through the pains and perils of vaccine fever. Why should a universal affliction be incurred to avert a partial one?—an affliction

confined to the young of the lower orders. The vaccination of Norwich from 1801 to 1819 would have cost far more sickness and death than did the smallpox of the same years. In short, if vaccination had conferred the immunity claimed for it, the price of the salvation would have been in prodigious excess of its value.

CHAPTER XXXIV.

SMALLPOX DISPLACED AND REPLACED.

DR. WATT'S DISCOVERY—GLASGOW, 1813.

ADDRESSING the House of Commons in 1878, Sir Thomas Chambers said, "You cannot show that Vaccination has reduced deaths, or saved a single life. There may be no Smallpox, but the disappearance of Smallpox is by no means equivalent to a reduction of mortality." M.P.'s were astonished and incredulous; but ignorantly. The fact is incontestable; and Dr. Robert Watt of Glasgow had the signal distinction of detecting and setting it forth in the year 1813.*

Watt was writing a treatise on Chincough, otherwise Whooping Cough, and in the course of his work made a careful examination of the registers of death in Glasgow to ascertain how far it was true "that the disease was more fatal some years than others; that it was more dangerous at a particular age; and that the female sex suffered more from it than the male;" and, from the outset of his investigation, "was struck with the immense numbers carried off yearly by the Smallpox." He might well be struck; for Glasgow was a rare place for Small-

* *An Inquiry into the Relative Mortality of the Principal Diseases of Children, and the numbers who have died under Ten Years of Age in Glasgow during the last Thirty Years.* By Robert Watt, M.D., Lecturer on the Theory and on the Practice of Medicine in Glasgow. Glasgow, 1813. Pp. 64.

pox, as appears from the following statement compiled from Watt's Tables—

DEATHS IN GLASGOW FOR TEN YEARS, 1783-1792.

Year.	From Smallpox.	Measles.	Whooping Cough.	Children under Two.	Children under Ten.	Total, all Ages.
1783	155	66	153	479	719	1413
1784	425	1	13	671	877	1623
1785	218	—	34	576	744	1552
1786	348	2	173	706	941	1622
1787	410	23	57	746	1016	1802
1788	399	1	17	770	1059	1982
1789	366	23	45	794	1058	1753
1790	336	33	177	903	1236	1866
1791	607	4	117	984	1367	2146
1792	202	58	68	664	902	1848
Total, ...	3466	211	854	7293	9919	17,607

The succeeding ten years, 1793-1802, repeat much the same tale, with, however, a diminution of mortality in an increasing population, and a decrease in smallpox with an increase in measles and whooping-cough: thus—

DEATHS IN GLASGOW FOR TEN YEARS, 1793-1802.

Year.	From Smallpox.	Measles.	Whooping Cough.	Children under Two.	Children under Ten.	Total, all Ages.
1793	389	5	112	807	1126	2045
1794	235	7	51	553	759	1445
1795	402	46	180	761	1048	1901
1796	177	92	60	562	797	1369
1797	354	5	76	586	884	1662
1798	309	3	98	642	864	1603
1799	370	43	95	783	1105	1906
1800	257	21	27	545	716	1550
1801	245	8	125	494	766	1434
1802	156	168	90	544	985	1770
Total, ...	2894	398	914	6277	9050	16,685

Considering these figures said Watt—

I remarked that the deaths by Smallpox were chiefly in infancy; hence the deaths under two or three years of age bore a very great proportion to the whole deaths in the city. Taking an average of several years, I found that more than half the human species died before they were ten years of age, and that of this half more than a third died of the Smallpox; so that nearly a fifth part of all that were born alive perished by this dreadful malady.

Watt meant of course the human species as exhibited in Glasgow, of whom more than half died before the age of ten, and a fifth of smallpox. What was true for a time of Glasgow smallpox was not even true of Edinburgh, much less of the whole earth.

Variolation was practised in Glasgow, but to what extent appears to be unknown. Certain, however, it is that smallpox was as little dreaded as are other calamities accounted common and unavoidable. Indeed many were not unwilling to subject their offspring to the disease at seasons supposed to be favourable on the principle of "getting a bad job over." Then, too, the mass of the population was disposed as if by design for the generation of febrile ailments. Tall buildings forming narrow lanes, wynds, or closes issued like so many rents or fissures from the leading thoroughfares. These buildings were divided into flats packed with humanity from basement to attic. Air and light were treated as superfluities. Water there was none, save what was brought from wells; and middens received the slops and refuse often shot from the windows. Life in a Glasgow wynd in former days is indescribable, yea almost inconceivable; yet in such wynds multitudes passed their existence, conscious of no hardship, recognising nothing better, and withal characterised by many virtues. Bearing such conditions in mind, the vital statistics of Glasgow excite no surprise: the wonder is that the death-rate did not draw nearer to extermination. As for smallpox, how could a family resident in a flat in a noisome Glasgow close at the end of last century escape smallpox, if smallpox were prevalent? To them smallpox lay in fate, and was accepted on the same terms as wind and weather, summer and winter.

Novelties have always had a ready welcome in Glasgow, and when cheap and easy salvation from smallpox was proclaimed, there was a rush for it. Smallpox abated: vaccination had the credit: and faith was justified. Considering the devastation smallpox had wrought among the young, Watt says—

I began to reflect how different the case must be now; and to calculate the great saving of human life that must have arisen from the Vaccine Inoculation. At this time [1813] above 15,000 had been inoculated publicly at the Faculty Hall, and perhaps twice or thrice that number in private practice. In eight years [1805-12] little more than 600 had died in Glasgow of Smallpox; whereas in 1784 the deaths by that disease alone amounted to 425, and in 1791 to 607; which, on both occasions, exceeded the fourth of the whole deaths in the city for the year.

It seemed reasonable to infer that since the mortality from smallpox had so largely declined, fewer children must have died; but to Watt's astonishment the facts did not answer to the logic. He writes—

To ascertain the real amount of this saving of infantile life, I turned up one of the later years, and by accident that of 1808, when to my utter astonishment, I found that still a half, or more than a half, perished before the tenth year of their age! I could hardly believe the testimony of my senses, and therefore began to turn up other years, when I found that in all of them the proportion was less than in 1808; but still on taking an average of several years, it amounted to nearly the same thing as at any former period during the last thirty years. This was a discovery I by no means expected, and how it could have come to pass appeared to me inexplicable.

We shall better understand Watt's perplexity over smallpox reduced and death unaffected, if we set before us the table of mortality for the decade during which vaccination was brought into practice in Glasgow.

DEATHS IN GLASGOW FOR TEN YEARS, 1803-1812.

Year.	From Smallpox.	Measles.	Whooping Cough.	Children under Two.	Children under Ten.	Total, all Ages.
1803	194	45	60	610	940	1860
1804	213	27	52	583	863	1670
1805	56	90	129	616	884	1671
1806	28	56	162	517	786	1620
1807	97	16	85	595	899	1806
1808	51	787	92	1079	1775	2623
1809	159	44	259	782	1187	2124
1810	28	19	147	765	1027	2111
1811	109	267	62	769	1274	2342
1812	78	304	103	804	1278	2348
Total, ...	1013	1655	1151	7120	10,913	20,175

To make the facts clear let us bring the results of the three decades together—

Decade.	From Smallpox.	Measles.	Whooping Cough.	Children under Two.	Children under Ten.	Total Deaths, All Ages.
1783-1792	3466	211	854	7293	9,919	17,607
1793-1802	2894	398	914	6277	9,050	16,685
1803-1812	1013	1655	1151	7120	10,913	20,175

Before making any commentary on these remarkable figures, it may be well to attend to what Watt had to say concerning them. He was satisfied that vaccination arrested smallpox, but it was plain that it did not arrest death, and he felt bound to find some explanation—

From every circumstance that has come under my observation, the efficacy of Vaccine Inoculation appeared certain. The experience of pretty extensive practice had confirmed me fully in this opinion. But still the question recurred, how are we to account for the same, or nearly the same, number of deaths under ten years of age? As no new disease has appeared, the deficiency occasioned by the want of Smallpox must have been made up by a greater mortality among the other diseases of children. Has it been equally divided among them, or has a greater share fallen to some than to others? To solve this question is the chief object of my inquiry.

To ascertain the fact, he divided the thirty years, 1783-1812, into five periods of six years each, and thus set forth the average proportionate mortalities—

Years.	From Smallpox.	Measles.	Whooping Cough.	Children under Two.	Children under Ten.	Total Deaths, All Ages.
1783-1788	19·55	·93	4·51	39·40	53·48	9,994
1789-1794	18·22	1·17	5·13	42·38	58·07	11,103
1795-1800	18·70	2·10	5·36	38·82	54·48	9,991
1801-1806	8·90	3·92	6·12	33·50	52·03	10,034
1807-1812	3·90	10·76	5·57	35·89	55·69	13,354

The first three of these periods, 1783-1800, had passed before the Vaccine Inoculation could have had any influence [observes Watt]; in the fourth, 1801-1806, it had nearly reached its maximum; and in the last, 1807-1812, it may be said to have been pretty fully established, perhaps as much so as in any other city in the empire.

Vaccination having been introduced to Glasgow to save life, Where was the salvation? Smallpox had fallen

off, but if its victims were merely assigned to other modes of death, where was the advantage? Watt continues—

The first thing which strikes the mind on surveying the preceding Table, is the vast diminution in the proportion of deaths by the Smallpox—a reduction from 19·55 to 3·90 per cent.; but the increase in the Measles column is still more remarkable—an increase from ·93 to 10·76 per cent. In Smallpox we have the deaths reduced to nearly a fifth of what they were twenty-five years ago, whilst in the same period, the deaths by Measles have increased more than eleven times. This is a fact so striking, that I am astonished it has not attracted the notice of older practitioners.

The greatest number of deaths from Smallpox in any one month during the last thirty years was 114 in October, 1791. In the following December they were 113. These are the only two instances in thirty years when the deaths by Smallpox amounted to 100 in a month. But these were slight visitations when compared with the ravages which have been committed in an equally short time by Measles. In May, 1803, the deaths by Measles alone amounted to 259, in June to 260, and in July to 118. In December, 1811, they amounted to 161, and in the January following to 130. What an amazing difference when we compare these numbers with 433, the sum of all the deaths by Measles in eighteen years preceding 1801! In the last five years 1430 have died of Measles in Glasgow.

This prodigious increase in the mortality from Measles was naturally referred by some observers to the practice of Vaccination, and Watt held there was ground for the assumption inasmuch as when Smallpox preceded Measles it made Measles milder—

When Measles was so prevalent and fatal in 1808, I was often told that it was owing to the Vaccine Inoculation; but this I considered an idle tale, the invention of those who were hostile to Cowpox. I could readily admit that more must die of Measles than formerly; for some of the weak and unhealthy, who would have died of Smallpox (saved from Smallpox) would fall a sacrifice to Measles; but I could not then go farther.

But however novel and strange the opinion may appear, it must be admitted that while Smallpox was in full force, it had the power of modifying and rendering Measles mild; and now that Smallpox is in great measure expelled, Measles is gradually coming to occupy the same ground. I am sorry to make this statement, but the facts, at least with regard to Glasgow, are too strong to admit of doubt. . . .

That Measles should have been modified by Smallpox is rendered

highly probable by the manner in which the Vaccine Disease prevents Smallpox or renders it so mild as to be without the smallest danger. May not Smallpox have a similar effect in relation to Measles?

When Smallpox was in full force, few children escaped, and most of those who had Smallpox and Measles had Smallpox first. This, I believe, will have been the case with more than nine-tenths of the community. Still, however, as Measles came round, it occasionally had precedence of Smallpox, and it was perhaps chiefly among such patients that it proved fatal. In looking over the registers of former years, I find the deaths by Measles were generally among very young children.

He was even disposed to believe that Smallpox, on the whole, exercised a beneficial influence in the eradication of latent disease—.

An opinion has prevailed with some, that Vaccination does positive harm by infusing peccant or vicious humour into the constitution. I do not see the smallest ground for this hypothesis; but that Smallpox does good to those who survive the disease by rendering the system insusceptible of other infections, or by rendering them milder when incurred, must, I think, be admitted. . . . I do not presume that the constitution is improved by Smallpox, but perhaps by eradicating certain unobserved deviations from health, which, if not early removed by the accession of some acute disease, would have proved the seeds of early mortality by gaining a deeper hold of the constitution before Measles and other epidemics of later appearance came round.

In this point of view, we are not to consider Smallpox as peculiarly fatal, but fatal merely as having the start of some other diseases. Measles, Chincough, Croup, and Scarlet Fever would have proved equally fatal had any of them occurred first. . . . It is only on this principle that we can explain how it happened that thirty years ago not one in a hundred died of Measles, whereas now one in ten dies. Thirty years ago as few escaped Measles as now, but before they were affected they had generally passed through Smallpox, by which the secondary disease was so modified as to be almost completely divested of danger.

Watt, it will be observed, treats smallpox throughout as a malady of childhood; thus confirming Monro's observation in 1765, that "the inhabitants of Scotland generally have smallpox in their infancy or childhood, very few adults being seen in the disease."

From the preceding excerpts, it is not difficult to comprehend Watt's position. He was persuaded of the

prophylaxy of vaccination; he was satisfied that it had reduced smallpox in Glasgow; but, to his astonishment, he discovered that it had not reduced the general death-rate; and that in so far as smallpox had been displaced, other ailments, and specially measles, had maintained the tale of fatality.

The discovery that the fall in smallpox was compensated for by a rise in deaths from other diseases was a remarkable discovery, the importance of which is as yet far from appreciated. Watt was however at fault in attributing the decline of smallpox in Glasgow to vaccination; and in failing to inquire whether the phenomenon had any relation to vaccination whatever. He is the best scientific demonstrater who most completely exhausts the possibilities to the contrary of what he seeks to establish. Supposing vaccination to be as powerful against smallpox as its promoters averred, the causes in Glasgow was not commensurate with the effect. Nowhere was vaccination more practised. 15,000 were vaccinated at the Faculty Hall, says Watt, "*and perhaps twice or thrice that number in private practice*"—a loose and questionable statement. The 15,000 operated on at the Faculty Hall in the course of ten years were the poor, the vast majority in Glasgow and elsewhere, and the chief sufferers from smallpox. The assumed "twice or thrice that number" were those who employed their own medical men—a luxury less common then than now. The population of Glasgow approached 100,000, and it is obvious that the larger part must have lived outside the fortification of the Jennerian rite.

But admitting that all, or nearly all, in Glasgow were vaccinated who had not had smallpox, still that would afford no proof for what was claimed. Watt was cautious, and held closely by his Glasgow evidence, content to have it taken for what it was worth; but had he ranged wider, he would have discovered that the fall in smallpox extended over Europe, and was as well marked in Vienna as in Glasgow, in Stockholm as in London, in Italy as in Denmark. As in Glasgow the

credit for the fall was claimed for vaccination, but the fall had set in before vaccination was heard of, and extended over populations to which vaccination had no application. Indeed Watt allows that the fatality of smallpox had begun to decline and that of measles to increase prior to the conveyance of the Jennerian salvation to Glasgow; but he failed to discern the significance of the fact. So too in other cities where smallpox fell off: the death-rate did not fall off; but, as in Glasgow, was kept up by cognate varieties of fever.

As concerns Watt, we have the advantage of some notes upon his "remarkable treatise" by Dr. William Farr in the *Thirtieth Annual Report of the Registrar-General,* 1869. Having given an abstract of Watt's results, Dr. Farr observes of his discovery of displaced and replaced mortality—

> This is an important point in pathology; and it must be admitted that although there were defects in his data, Dr. Watt succeeds in showing (1) that Smallpox was one of the greatest causes of death in Glasgow down to the year 1800, (2) that the deaths by Smallpox were reduced to a fifth of their original number by Vaccination,* and (3) that the children died in nearly the same numbers as before, but of other forms of disease.
>
> Glasgow has always been famous for statistics, and these unfortunately show an increase of the mortality of children. Thus in the five years 1821-25 the mortality of boys under five years of age was 8·08; in 1831-35 it was 9·78. In the year 1865 the mortality of boys in Glasgow was 11·48, of girls, 10·36. These recent returns confirm the principle. Smallpox is no longer so fatal as it was before Vaccination was introduced; in Glasgow it caused in the year 1864 no longer 20 but 2 in 100 deaths — only 180 in 6054 deaths, that is 3 per cent. of the deaths under five years of age; yet the mortality of children is certainly as high, probably higher, than it was in the last 10 years of the last century.
>
> Compulsory Vaccination in England has reduced further the fatality of Smallpox, but since 1853 other diseases have so prevailed as to counter-balance the gain under this head. The mortality of children has not declined in a corresponding degree.

With confirmation under such authority, it is needless to enforce the validity and importance of Watt's discovery. Dr. Farr is pleased to ascribe the subsidence of

* An inference disputed for reasons given.

smallpox alike in England and Glasgow to vaccination, but he makes no effort to prove his case: indeed the effort might have led him to recognise his mistake. Referring to scarlet-fever, he shows how from a mild it has become a severe affliction—

> Sydenham (d. 1689) describes simple Scarlatina distinctly: he does not refer to the throat affections, and says the patient can only die by the doctor's default. Joseph Frank describes the disease as *now* the most dreadful scourge in Europe.

If then scarlet fever has of itself acquired this terrible intensity and predominance, why should it be thought incredible that smallpox of itself should undergo correspondent mitigation and diminution? Or, is it to be argued that vaccination has extinguished smallpox to revive as scarlet fever?

Dr. Farr proceeds to observe—

> It is singular that Dr. Watt, evidently a practitioner of great sagacity, does not at all advert to the wretched sanitary condition in which the increasing population of Glasgow lived at the time he was writing.

It is the observation of Dr. Farr that is singular. At the time when Watt wrote there was no clear conception of the relation of condition to disease. Jenner was always writing about smallpox, yet there is not a hint in any of his papers as to its development in filth and stench. His own residence was a pesthouse, but it never entered into his head to ask, Why? Let us avoid anachronism. Those whose memory or reading extends to the cholera epidemic of 1831-32 will know, that it was regarded as an inscrutable visitation toward which humble submission was the proper attitude. A letter of Collins, the artist, to the Rev. R. A. Thorpe, 26th November, 1831, correctly expresses the common feeling. Referring to the Cholera and the Reform Bill, he says—

> Of the two scourges now afflicting us, I know not which is the worse, but I *do* know that we have fallen into the hands of God in both cases, and not before we deserved it.*

* *Memoirs of William Collins, R.A.* By his Son. Vol. ii. p. 3.

I myself recollect the dismay the Combes excited in Scotland when they began to teach that we were largely responsible for our ailments, and that sickness and sanctity were an unwholesome alliance; and how a pious physician remarked, when the prevalence of typhus in Glasgow had been denounced as disgraceful to the authorities, "We have learnt the truth in another school, and would shudder to impeach the Divine prerogative in life or in death." What Watt really thought of smallpox is to be found in a passage of his treatise which Dr. Farr must have overlooked. He says—

We may it seems, by the permission of Divine Providence, deprive death of some of its apparently most efficient means, but deprived of these, new means are discovered, or the old improved.

I cannot help quoting the following passage from Dr. Woolcombe as somewhat prophetic of this general result. Says he—

"May not the discovery of the Cowpox, if it should ultimately effect the extermination of the Smallpox, which it may do when the prejudices of mankind shall permit, be welcomed rather on account of its influence in diminishing human suffering, than on account of its effect in diminishing human mortality? Since disease is one of the appointed checks to excessive population, and the plan of Providence in the creation of human life requires the termination of the existence of one-third of its creatures before they have attained the age of two years, it may be doubted whether the annihilation of so efficient an instrument as Smallpox can be admitted without the substitution of some other equally destructive malady. The substituted malady may indeed be productive of less collateral affliction than the loathsome distemper whose place it supplies. But granting that no direct substitute should arise, it will not follow that disease in general will be deprived of its accustomed share in checking population; and if it be not, the only difference will be in the proportion of victims submitted to other disorders. The infant rescued from Smallpox, may be rescued only to perish in childhood by Measles or Scarlatina, or be preserved to swell the list of youthful victims to the insatiate maw of Consumption."*

Such was the manner in which Watt dealt with the problem of mortality. Sanitation had no place in his consideration. It was, he thought, the design of Providence to limit population, and if children were saved from smallpox, they would be cut off otherwise; and the

* *Remarks on the Frequency and Fatality of Different Diseases.* 1808.

statistics of Glasgow confirmed the opinion. Smallpox had abated, but funerals were numerous as ever. The uniformity of the mortality we admit, but no longer ascribe it to Providence intent on the limitation of population. If children die, it is not of fate, but from the ignorance, or indifference, or wickedness of those who are responsible for them.

Still some may object, "If by vaccination or any other means smallpox is got rid of, Should we not to that extent save life?" The answer is, No. Life is only extensible in so far as improvement is effected in the conditions of life. Forms of disease are subject to modification; they are probably convertible and interchangeable; one form comes as another goes; but conditions remaining the same, the crop of death is equal. Hence Mr. Edwin Chadwick's advice—

> Keep your eye on the death-rate. Let nothing short of its reduction satisfy you. There may be no startling outbreak of this fever or of that fever; but if the death-rate is unabated, there can be no improvement that ought to satisfy you. The death-rate is the test of sanitary progress. Keep therefore your eye on the death-rate.

Thus it was that though smallpox subsided in Glasgow no lives were saved; for no change for the better having taken place in the condition of the inhabitants, the means of death were merely transferred to other agencies. As Dr. Farr observes—

> The Glasgow victims were gathered together from all quarters, from the Highlands, from Ireland, and from elsewhere; they were lodged in conditions unsuitable to human life. . . . To render them unassailable by the matter of Smallpox was not enough, for it left them exposed to the other forms of disease. Thus in a garden where the flowers are neglected, to keep off thistle-down merely leaves the ground open to the world of surrounding weeds.
>
> To operate on mortality, protection against every one of the fatal zymotic diseases is required; otherwise the suppression of one disease-element opens the way to another.

Dr. Farr thus exactly expresses what I wish to enforce. Whether smallpox prevail or disappear is of little importance. What is of importance is the prevalence of disease and death, and not the presence or absence of any of

their special factors when the total result is constant and the measure of violated physiological laws. It is true that Dr. Farr recognises a virtue in vaccination, but on much the same terms that obeisance is rendered to a fetish. Vaccination might be struck out of his arguments without affecting his conclusions. How, for example, could the facts with their rationale be better stated than in these his words?—

Out of 1000 born in Liverpool, 518 children were destroyed in the first ten years of their life; some by Smallpox, many by Measles, Scarlatina, Whooping Cough, many by Typhus and Enteric Fever; one disease prevailing in one year, another disease prevailing in another; *but still yielding the like fatal results.* This represents what Dr. Watt found in Glasgow long ago. Out of 1000 children born in London, 351 died under ten years of age by zymotic diseases and other causes; the deaths are less by 167 than the deaths in Liverpool. How much less is the loss of life by these diseases in the healthy districts of England! There, out of 1000, only 205 children die in the first ten years of life. The enormous difference cannot be ascribed to Vaccination, as common in town as in country; the protection of life against Smallpox alone leaves it still at the mercy of the dangerous diseases of the insalubrious city.

Death from disease in insalubrious circumstances is but part of the mischief. Those who survive find their energies enfeebled and depressed in the struggle for survival. The time must surely come when smallpox and all allied forms of disease will be accounted discreditable and intolerable, and when their occurrence will be taken for notes of warning and command to search for and root out their causes. Then, too, magical preventives and palliatives and medical cures will have a very different place in the popular imagination.

Jenner read Watt's pamphlet, and, *more suo*, the wretched creature failed to discern its scope and significance, seeing in it a malevolent aggression upon his interest in vaccination. He wrote to Moore from Cheltenham, 6th December, 1813—

You probably may not have seen a pamphlet lately published by Dr. Watt, as there is nothing in its title that develops its pur-

port or *evil tendency*. Measles, it seems, has been extremely fatal in Glasgow for the last four or five years among children, and during this period Vaccination has been practised almost universally. Previously to this, Measles was considered a mild disease. Hence Dr. Watt infers that Smallpox is a kind of *preparative* for Measles, rendering the disease more mild. In short, he says, or seems to say, that we have gained nothing by the introduction of Cowpox; for that Measles and Smallpox have now changed places with regard to their fatal tendency. Is not this very shocking? Here is a new and unexpected twig shot forth for the sinking Anti-Vaccinist to cling to.*

Observe, the truth of Dr. Watt's evidence was passed over! Inasmuch as it did not tend to the glory of vaccination, it was "evil," and it was "shocking." At a later date Baron assumed the same line, saying—

Notwithstanding the proofs of the power of Vaccination in diminishing the mortality from Smallpox, it has been a question whether *infantile* mortality has been diminished; it having been supposed that the beneficial effects of Vaccination were countervailed by a greater mortality in the other diseases of children. This very discouraging statement was published by Dr. Watt, of Glasgow; and the opinion, which was hastily adopted and unwisely promulgated, has unquestionably had a great effect in retarding the progress of Vaccination. It, unfortunately, gave countenance to some of the worst prejudices of those who were opposed to the practice.†

Here again we see no attempt made to disprove Watt's statement, whilst its mischievousness was assumed because it was "discouraging," and lent "countenance to some of the worst prejudices of those who were opposed to vaccination!" Truth is the best of all things—except when it spoils business. Then it becomes "evil," and "shocking," and "gives countenance to the worst prejudices."

* Baron's *Life of Jenner*, vol. ii. p. 392.
† *Ibid.*, vol. ii. p. 248.

CHAPTER XXXV.

THE NATIONAL VACCINE ESTABLISHMENT—1808-40.

We shall now return to the current of our Story, nor turn aside until it is brought to a conclusion in the enactment of Compulsory Vaccination.

With £3000 a-year the National Vaccine Establishment was constituted by the House of Commons, on 9th June, 1808; sixty members voting for the project, and five against.

The reasons for the institution were somewhat complicated. The Royal Jennerian Society had been wrecked by Jenner's jealousy and intrigue. The working and subscribing members seceded with Dr. Walker, and set up the London Vaccine Institution; and a variety of ornamental and influential folk, who paid little and did less, found themselves with Jenner on their hands, exigent, impecunious, and helpless, and they publicly committed to the patronage and diffusion of vaccination.

It was an awkward situation, and two operations for relief became necessary: first, to dispose of Jenner; and second, to escape from the maintenance of vaccination.

The first was effected by inducing the House of Commons to vote Jenner £20,000, and the second by the institution of the National Vaccine Establishment. Thus dexterously, fashionable and medical London contrived to get rid of Jenner and vaccination on terms satisfactory to all concerned.

The early furore for vaccination had spent itself. Scepticism had thriven by experience. Many of the vaccinated had taken smallpox, and explanations and excuses were becoming exhausted. It was easy to claim the benefit of mistakes when the operators were amateurs; but when the failures were the work of Jenner and his certified associates, it was hard for faith

to hold out. Spurious cowpox served to account for many disasters; but when Jenner, pressed to define spurious cowpox, was driven to confess its non-existence, and that, when he had spoken of it, he had only meant any irregular action of cowpox on the persons of the vaccinated, it is easy to imagine how people who had respect for themselves were pleased to drop out of the connection. They might not care to express all they suspected, nor to proclaim their credulity, but it was a welcome deliverance to be no longer responsible for a practice and a character grown so questionable. On John Bull's broad back was laid the burden.

In the project of the National Vaccine Establishment there was an explicit concession to the scepticism of the time. One of its purposes was alleged to be *Investigation*. Lord Henry Petty, in recommending the measure in the House of Commons, observed—"The evidence as to the infallible efficacy of vaccination is confessedly incomplete; and it is highly desirable that the truth should be ascertained by public inquiry, rather than by societies whose conductors are liable to the imputation of mercenary motives." Jenner bitterly resented the indignity implied in placing vaccination under investigation. He held, and in a sense justly, that it was too late to speak of investigation when the reality of his discovery had been attested in the public honours and rewards conferred upon him. "Alas!" he exclaimed, "poor Vaccinia, how art thou degraded!" He was still further outraged by his exclusion from the Board of the Establishment, on the ground that the public might have assurance of impartiality. How much sincerity there was in the profession, I do not pretend to divine; it is sufficient to point out that matters had come to such a pass with vaccination that it was considered expedient to conciliate the taxpayers with the promise of inquiry for their money. Plainly the enthusiastic certainty of 1802 had given place to a widely different sentiment in 1808.

There were, however, wheels within wheels. "You may take it for granted," said a Radical of those days, "that

every vote of public money has an object in excess of the ostensible one, and covers jobs big or jobs little." And so it was in the case before us. The discomfited residue of the Royal Jennerian Society had influence with the Government to take over their smashed-up enterprise; but their solicitation might have been ineffectual, had not the Government seen a way of providing for a certain claimant in the course of the operation. Sir John Moore was serving his country in the Peninsula; he had friends at the sources of power; and he had a brother named James, surgeon to the Life Guards, for whom a comfortable berth was wanted. Let us make Moore, they said, Director of this new Establishment, with a salary of £200 a-year; and the thing was done. Investigation was promised, Cowpox was endowed, and Moore was provided for.

Jenner had actively promoted the formation of the Establishment, under the conviction that he should be its governor; but when the organisation was revealed, he was profoundly disgusted. The management was assigned to a Board of eight members, consisting of the president and four censors of the College of Physicians, and the master and two governors of the College of Surgeons, with salaries of £100 a-year apiece. From this Board, as stated, Jenner was deliberately excluded, "so as to ensure impartial investigation." It was at first proposed to hold Jenner subordinate to the Board, giving him the title of Director, with Moore as his working deputy; for it was clearly recognised by those who had had experience of him during his London career, that for regular duty he was good for nothing; and that with his sickly family resident in Gloucestershire, he was never to be reckoned upon for a day. When, however, the Board disregarded his nominations, especially that of his bully, John Ring, as "Principal Vaccinator and Inspector of Stations," he at once severed his connection with the Establishment; "since," in his own words, "he found that he was to have nothing to do, and that his office was only a name." "My not being a member of the

British Vaccine Establishment will," he wrote, "astonish the world; and no one in it can be more astonished than myself"; but so far as can be discerned, the astonishment was chiefly limited to himself. Evanescent and futile is the astonishment of the world under most circumstances, and had the public opinion of the time been consulted, there is little doubt that it would have gone with the Board against Jenner.

Moore was, therefore, promoted to Jenner's place as Director of the National Vaccine Establishment, in subordination to the Board of Physicians and Surgeons. Seven stations, with seven superintendent surgeons, were opened in London for vaccinating all who should apply, and for collecting and distributing virus.

> At first [writes Moore] the applicants for Vaccination at the various stations were not numerous, not amounting to 3,000 a year; but, by continued exertions, and the declension of prejudice, the numbers regularly increased, and 7,771 persons were vaccinated in London in the year 1816.*

These numbers are significant, as indicating the extent of the collapse of vaccination, and how little the continuous decline of smallpox in London was due to its extension.

Moore was a shrewd tactician. He had the sense to recognise that if there was anything in vaccination, it was folly to stand at variance with Jenner; and by persuading him that he exaggerated the offence implied in the policy of the Board, he gradually soothed his feelings and led him into a long and confidential correspondence. Jenner, on his side, finding that nothing resulted from his sulks, relaxed, and from time to time favoured the Board with the light of his countenance and counsels.

The national endowment of vaccination affected prejudicially all other enterprises in the same line. What remained of the Royal Jennerian Society withered up, and the conductors of the London Vaccine Institution found the collection of subscriptions almost impossible. It was naturally objected by those solicited, "Why should

* *History and Practice of Vaccination*, p. 223.

we be asked to subscribe for what Government has already provided?" But with Dr. John Walker, the director of the London Institution, vaccination was a fanaticism, and he was ready to live on bread and water rather than withdraw from the promotion of what he was persuaded was a work of salvation. He therefore struggled on, in spite of discouragement and petty means, and as the inability of the Government Establishment to meet demands became manifest, whether from excess of dignity or apathy, the Quaker Institution, as it was called, began to thrive, to acquire the confidence alike of the medical profession and the public, and to rival in business the Establishment itself.

As for the investigation promised in the House of Commons, it was never even attempted. Jenner's anxiety was superfluous. When a case of smallpox, or injury, or death after vaccination was reported, it was the recognised formula to assert either some defect in the operation, or the virus, or some cause, or any cause *ab extra* rather than allow the Jennerian principle to suffer. As an illustration of the procedure of the Board in this respect, we have the instance of Mr. Thomas Brown, surgeon, Musselburgh, as served up in Moore's insolence—

> The Vaccine was in two years spread over Scotland. After a time, however, one croaking voice was raised to disturb the general concord. Mr. Brown, who was fretting in obscurity at Musselburgh, published a book in 1809 to maintain that the Vaccine only possessed the property of preventing Smallpox temporarily; that in three years its influence declined; and in five or six, hardly any security against Smallpox remained.

Brown submitted his cases to the Board, but they met with no attention.

> In this extremity [continues Moore] he wrote a scurrilous accusation of the National Vaccine Establishment to the Secretary of State, which was referred to the Board. When they met, the Registrar read it, and then tied it up with red tape among that mass of papers which are consigned to rest.*

Could more be expressed in less? Thus was Brown, the representative of true science and enlightened and honest

* *History and Practice of Vaccination*, p. 226.

inquiry, set at naught and traduced by a Board endowed for investigation! Nor, in saying so, do I speak simply as an antagonist of vaccination. Brown was no anti-vaccinist. What he contended for is now everywhere admitted by vaccinists. They allow that the protection afforded by vaccination is temporary, and that it is necessary to renew its prophylaxy from time to time. The practice of revaccination is based on the verity of Brown's contention, and yet, according to Moore, he was a vain-glorious and scurrilous fellow, and by Jenner was pronounced "an object of commiseration rather than resentment."

As purveyors of virus, too, the Establishment fell behind Walker's Institution, and the Quakers' pox had the preference among connoisseurs in the article. Jenner wrote to Moore, 5th March, 1816—

> The Matter sent out by the National Vaccine Establishment is much complained of. I was applied to a few weeks since by the surgeons of the hospital at Gloucester for some Vaccine Matter, and their request was accompanied by the observation, "That after using thirty points sent from town, not a single pustule was produced."

To account for such failures, it began to be reported that the virus was gradually losing its virtue in transit through many arms; but, continued Jenner—

> Medical men are more expert than others in discovering causes without the fatigue of much thinking, and in the present instance they have all hit upon the wrong one—no great wonder. They attribute the lessened activity of the Matter, and its disposition to produce imperfect vesicles, to the great length of time which has elapsed since it was taken from the cow, and to the immense number of human subjects through whom it has passed. This is a conjecture, and I can destroy it by facts. The Matter may undergo a change that may render it unfit for further use by passing even from one individual to another; and this was as likely to happen in the first year of Vaccination as the twentieth. There are medical men who will take anything they can catch under the mere name of Vaccine Matter, or from pustules incorrect in character. It is from the spread of such Matter that the dissatisfaction of which I speak has arisen.*

* Baron's *Life of Jenner*, vol. ii., p. 398.

When we refer to the record of the National Vaccine Establishment, there is little reason for surprise over its inefficiency. The House of Commons, having voted the endowment of £3,000 a-year, the Government committed the organisation of the Establishment and the administration of its funds to the heads of the Royal College of Physicians. How the £3,000 a-year was disposed of, came to light in 1822, when the accounts were published. The statement stood thus for 1821, representing what had gone on during the past twelve years—

	£	£
PHYSICIANS.—Sir Henry Halford, Bart.	100	
Dr. Frampton	100	
Dr. Thomas Hume	100	
Dr. Charles Badham	100	
Dr. R. Lloyd	100	
		500
SURGEONS.—Sir Everard Home	100	
Sir W. Blizard	100	
Henry Cline	100	
		300
REGISTRAR.—James Hervey, M.D.	300	
DIRECTOR.— James Moore	200	
SECRETARY.—C. Murray	50	
		550
VACCINATORS.—One at £150	150	
Five ,, 100	500	
One ,, 75	75	
Six ,, 50	300	
		1,025
HOUSEKEEPER	40	
MESSENGER	52	
Rent of furnished House, 18 Percy Street	260	
		352
Printing, stationery, coal, candle, &c.	—	183
Total		£2,910

The accounts, though they revealed what was suspected, were widely denounced as scandalous. Parliament voted £3,000 a-year to extend vaccination among the poor, and here were a set of physicians and surgeons pocketing £800 of it, and muddling away the greater part of the remainder. They affected to regard vaccination as the

deliverance of mankind from the scourge of smallpox, and yet they had not hesitated to appropriate the means provided for its diffusion! There was scarcely the pretence of work for wages. The Board met once a week, but the attendance was irregular, and at each member's discretion. The eight hundred-a-yearers dropped in when convenient for gossip, and to ask what was doing. When set upon their defence, the argument was that the public were distrustful of vaccination, and that to inspire confidence it was necessary that the Establishment should have the benefit of the ostensible support of the College of Physicians and the College of Surgeons, for which the honorarium of £100 annually to each of their representatives was by no means excessive. In reply, it was pointed out that Dr. Walker, supported by voluntary contributions, collected with difficulty, and with less than the pay of many an artizan, had done more for vaccination in London and the country, and was more respected and trusted, than the Establishment with all the prestige of corporate authority.

As the result of many protests, the waste of public money was brought before the House of Commons by Joseph Hume. It was Mr. Hume's distinction that, with strong good sense and invincible patience, he upheld the standard of honesty in public finance, holding that it was as wrong to defraud the nation as to defraud an individual; and that it was as foolish (not to say more wicked) to pay away the people's money for nothing, as to throw away one's own. The principle, so obviously indisputable, and yet so shamelessly violated in every department of the State, was enforced in detail by Mr. Hume with a persistency and success that has never been surpassed, and, I fear, never appreciated as deserved. He showed that patriotism is a practical virtue, instead of a sentimental pretext for public plunder, and taught honour to placemen to whom honour was unknown. Appropriately, therefore, Mr. Hume led the charge against the National Vaccine Establishment, and in 1827 the annual vote was reduced from £3,000 to £2,500, £300 of the £500 being saved by knocking off two useless physicians

and one useless surgeon. Even then the extravagance that remained continued to excite indignation, the consequences of which are recorded in a "Report from the Select Committee on the Vaccine Board, with the Minutes of Evidence, ordered by the House of Commons to be printed, 28th August, 1833." If space allowed, it would be easy to linger over the disclosures of this Committee. Suffice it to say, that Dr. George Gregory, of the Small-pox Hospital, held that the whole work of the Board might be done handsomely on £1,200 a-year. The Committee, however, shrank from such a severe exercise of economy, and recommended the provision of the following staff and expenses—

Vaccinators at Stations in London (a sum which will probably admit of reduction)		£900
Inspector Registrar	Qualified on occasion to exchange duties	200 200
Messenger		55
Offices, rent of		100
Incidental expenses		150
Total		£1,605

The Committee observed that the Board might consist of two physicians and one surgeon, whose duties, not being onerous, might be discharged gratuitously. As the Committee was more loose-handed than Dr. Gregory, so the Commons were laxer than the Committee. The President and a Censor of the College of Physicians, and the President of the College of Surgeons, were suffered to continue their £100 a-year each, and the annual subsidy for the Establishment stood fixed at £2,200, until vaccination, under the disguise of sanitation, developed into the monstrous proportions with which we are at this day afflicted.

There is much talk prevalent in favour of "the endowment of research;" but what may come of such endowment, when not sharply looked after, is manifest in the example of the National Vaccine Establishment. The investigation, assumed to start with, was never pursued; and the guardianship of the public interest undertaken

by the Colleges of Physicians and Surgeons was never anything but make-believe. Annual Reports were presented to Parliament, signed by the heads of the Establishment, but of research they bore no trace, and many of them might have been dashed off by the Registrar in the course of an hour. Destitute of any scientific merit, these reports yet afford some curious glimpses of what was going on from year to year, with indications of the chief points of resistance encountered by the practice of vaccination; and, in turning over the series from 1810 to 1840, I have made the following notes, which may be read, perhaps, with interest.

VARIOLATION.

The chief resistance proceeded from the inoculators with smallpox; indeed, with the exception of apathy, there might be said to be no other resistance. Hence we read under the several dates—

1810.—During 1809, the surgeons vaccinated 1,493 persons. We are sorry to have to relate a decline of Vaccination in the Metropolis, and an apparent indisposition to the practice of it; and to express regret that there should be evil-disposed persons, who are endeavouring to frustrate His Majesty's intentions by alarming the misinformed with stories which they know to be false.

1812.—We have reason to ascribe the increase of Smallpox in London during last year to the rash and inconsiderate manner in which great numbers are still inoculated for the Smallpox, and afterwards required to attend two or three times a week at the place of inoculation in every stage of their illness. The practice of Inoculation is the great means whereby Smallpox is kept in existence, and its infection propagated to persons and places where it would not otherwise be seen.

1814.—The Board has with great regret to observe that, although the punishment of three months' imprisonment was awarded against Sophia Vantandillo, for carrying her child, whilst under the influence of Smallpox, through the streets, (which infected many others, eight of whom died) the unwary are still enticed by the hand-bills of shameless empirics to submit their children to Variolous Inoculation. It is, however, to be hoped that the above sentence passed by the Court of King's Bench, which the Board has taken every method of promulgating, may produce considerable benefit. The Board selected Sophia Vantandillo as a proper example on account of the extent of the mischief occasioned by her misconduct; and

that this prosecution, followed by a lenient punishment, may prevent any further wilful exposure of inoculated persons, is its fervent wish. The Board at the same time prosecuted Mr. Burnet, who inoculated the child, and who has long circulated most mischievous and offensive handbills, offering to inoculate persons with Smallpox gratis, and stigmatising Vaccination as productive of the most loathsome disease. This practitioner having suffered judgment to go by default, has been sentenced by the Court of King's Bench to six months' imprisonment.

The whole of the expenses incident to this Establishment for 1814 have been defrayed by the vote of last year, but the Board regrets that in consequence of the recent prosecutions and convictions, and the measures adopted for the more effectual extension of the practice of vaccination throughout the Empire, an addition of £500 to the annual grant will be necessary.

1815.—In Edinburgh, Glasgow, and Norwich, Inoculation is disused, and, in consequence, the Smallpox is scarcely known. In the country about Aberystwith in Wales, and Bawtry in Yorkshire, it has entirely disappeared. The reverse is, unhappily, the case in Portsmouth, Bristol, and London. In the Metropolis alone the mortality may be estimated at 1,000 annually; perhaps throughout the United Kingdom it is not less than ten times that number. It appears to us that this waste of human life can be prevented only by such legislative enactments as will entirely put a stop to Inoculation with Smallpox.

That smallpox was increased by variolation we have no reason to doubt, notwithstanding the fact that toward the close of the last century, when variolation was most practised, smallpox was steadily falling-off; but to ascribe the existence and persistence of smallpox to variolation was absurd. Smallpox was a widely-diffused disease before variolation was introduced to anticipate and minimise it.

1817.—The pernicious practice of Smallpox Inoculation, now very generally relinquished by the medical profession, is only persisted in by a very few of the least creditable class of practitioners, and is usually carried on clandestinely; yet the Board are concerned to state that this destructive operation is now performed for gain by itinerant Empirics, Farriers, Publicans, Nurses, low, cunning people of both sexes, and of various descriptions. And such is the infatuation of the poor and ignorant, that many of them carry their infants to be inoculated by those who only know how to inflict, but not how to assuage, the violence of Smallpox. The consequence has been that many have perished under their management; and the disease in particular districts has been widely

disseminated. As this iniquitous conduct has prevailed much in London, an epidemic of Smallpox was last year excited among those who were not secured by Vaccination, and 1,051 persons died of the disease.

1836.—Only 300 died of Smallpox in London in the course of last year; and it is probable that this mortality, however comparatively small, is owing to the continued partial practice of Inoculation, which is liable to disseminate far and wide its contagious influence, to the imminent danger of all who have not been protected by previous Vaccination, or by having had Smallpox already.

Variolation was made a penal offence in 1840, and became less available as an excuse for the persistence of smallpox in defiance of vaccination.

FAILURE OF VACCINATION.

Accepting Jenner's revelation, the heads of the medical profession in London assured the public, in a manifesto in 1800, that "those persons who have had Cowpox are perfectly secure from the future infection of Smallpox." It was a rash assertion. Proofs of its untruth were not slow to appear. At first they were denied, then explained away, and then admitted under qualifications more or less adroit. When, in 1808, the National Vaccine Establishment was constituted, the fact of the failure of Vaccination to answer to its original promise was generally recognised. Nevertheless, the reports of the Establishment exhibit much ingenious wriggling and attempts to out-lie Nature. For example—

1811.—That in some instances Smallpox has affected persons who have been most carefully vaccinated, is sufficiently established; nor ought we to be surprised at this, when we consider that Inoculation for Smallpox sometimes fails, and that several cases may be produced in which persons have been affected with the natural disease more than once in the course of life. The Board have infinite satisfaction in stating the two following important and decisive facts in proof of the efficacy and safety of Vaccination, namely, that in the cases which have come to their knowledge, Smallpox after Vaccination, with a very few exceptions, has been a mild disease, and that out of the many hundred thousand persons vaccinated, not a single authenticated instance has been communicated to them of the occurrence of fatal Smallpox after Vaccination.

The Board have great pleasure in stating that the money granted

by Parliament during the last session has been sufficient to defray the expenses of the year 1811, and they are of opinion that the same sum will be adequate to the expenditure of the current year.

There were 3,148 vaccinations effected under the Board in 1811, which was at the rate of about £1 a-head.

Moore, after reporting some cases of smallpox after vaccination, at St. Osyth, in Essex, went on to say—

1816.—Some very rare instances of failures in Vaccination, as exceptions to a general law, may be expected as long as Smallpox is prevalent; since it has been fully ascertained that when the air is strongly impregnated with the infectious vapour of Smallpox, some of those who have had the disease are attacked a second time.

1818.—From the foundation of this Establishment in 1808 to the present year there have been vaccinated 52,253 persons at the stations in London. Only four of these are yet known to have had Smallpox afterwards, and these were never very seriously ill.

1819.—The testimonies of some of our correspondents concur in showing that great numbers of persons who had been vaccinated have been subsequently seized with a disease presenting all the essential characters of Smallpox; but that in the great majority of such cases, the disease has been of comparatively short duration, unattended by symptoms of danger. In several of these cases, however, the malady has been prolonged to its ordinary period, and in eight reported cases it has proved fatal. It appears to us to be fairly established that the disposition in the vaccinated to be thus affected by the contagion of Smallpox does not depend upon the time that has elapsed after Vaccination, since some persons have been so affected who had recently been vaccinated, whilst others who had been vaccinated eighteen and twenty years have been variolated, and exposed to contagion with impunity.

1820.—It is true that we have received accounts from different parts of the country of numerous cases of Smallpox having occurred after Vaccination, and we cannot doubt that the prejudices of the people against this preventive are assignable (and not altogether unreasonably, perhaps) to this cause. These cases the Board have industriously investigated, and though it appears that many of them rest only on hearsay evidence, and that others seem to have undergone the Vaccine Process imperfectly, yet after every reasonable deduction, we are compelled to allow that too many still remain on undeniable proof to leave any doubt that the pretensions of Vaccination, to the merit of a perfect and exclusive security in all cases against Smallpox, were at first admitted too unreservedly.

1825.—That a considerable number of persons have had Smallpox after having been vaccinated, we are ready to admit; although of cases of this kind, a large majority are found on examination to be without that test of the operation being performed

successfully and effectually, which all agree to be necessary to perfect security. Vaccination, therefore, it will be said, does not afford an absolute and perfect security. We do not present it to the world with that pretension, but we declare it to be the least imperfect of the resources we possess for encountering the disease.

1827.—It is true, cases are reported to us very often of the occurrence of Smallpox after Vaccination; but we have reason to believe that the number of those who fall into this safe, though sometimes severe disease, after Vaccination, is not greater than that of those who formerly *died* by Inoculation whilst that practice prevailed.

1833.—Of an equal number of persons vaccinated and variolated, only so many of the former will be capable of taking the Smallpox afterwards, and that in a safe degree of the disease, as are found to die by the latter.

1836.—If 300 children be vaccinated, one will be susceptible of Smallpox afterwards, but only in a mild and perfectly safe form, whereas if 300 be variolated, one will surely die.

As evolutions from inner consciousness, the statistics of Variolation and Vaccination under 1827, 1833, and 1836 are noteworthy. They illustrate the facility of the Board at the discovery of what was thought *ought to be true.*

DEVELOPMENT OF A FABULOUS SALVATION.

1811.—Previous to the discovery of Vaccination, the average number of deaths by Smallpox within the London bills of mortality was 2,000 annually; whereas during 1811, only 751 died of the disease, notwithstanding the increase of population.

1818.—During the year, 6,289 have been vaccinated in London and the vicinity; and the Board have much satisfaction in adducing unequivocal evidence of the increasing advantages of the Jennerian discovery; for it appears from the bills of mortality of London that, instead of 2,000 deaths by Smallpox, which was the annual average previous to the practice of Vaccination, there died in 1818 only 421.

That, previous to the introduction of vaccination, 2,000 was the average annual death-rate from smallpox in London is a statement that requires definition. At an early date the number is under the mark, and at a later it is over the mark. Dr. Farr delivers the truth in these words—

Smallpox attained its maximum mortality after Inoculation was introduced. The annual deaths from Smallpox in London, from

1760 to 1779, were on an average 2,323. In the next twenty years, 1780 to 1799, they declined to 1,740. The disease, therefore, began to grow less fatal before Vaccination was discovered, indicating, together with the diminution of fevers, the general improvement of health then taking place.

Bearing Dr. Farr's figures in mind (and not forgetting the 2,000 adduced by the Board in the reports for 1811 and 1818), what does the reader think of the following audacious attempts on public credulity?—

1826.—From the quantity of vaccine lymph distributed, we are led to presume the practice of Vaccination is becoming daily more general; and the inference is still further confirmed by the fact that in 1826, only 503 deaths have occurred from Smallpox within the bills of mortality; whereas in the preceding year, 1,299 persons are recorded as having fallen victims to the loathsome disease. The whole of this difference ought not, perhaps, in candour to be attributed to the influence of Vaccination; for Smallpox during 1825 assumed a peculiarly malignant character; and there were more instances of the distemper occurring twice in the same individual than had ever been reported to us before. But when we reflect that before the introduction of Vaccination the average number of deaths from Smallpox in London was annually about 4,000, no stronger argument can reasonably be demanded in favour of the value of this important discovery. Nor can any more striking proof be given of the paternal care of the Government to protect the people at home and abroad from this destructive disease than the establishment and maintenance of this Board.

The bouncing falsehood, having passed muster, was repeated with enlargement at a suitable interval—

1834.—Only 334 deaths by Smallpox have been reported, a number considerably less than have died in any year since the introduction of Vaccination, and falling short by at least 4,000 of the average of deaths annually by Smallpox in London before the protecting influence of Cowpox was discovered and promulgated.

And again it appeared with a fresh touch of exaggeration—

1836.—The annual loss of life by Smallpox in the Metropolis before Vaccination was established exceeded 5,000, whereas, in the course of last year, only 300 died of the distemper.

Impunity being apparently assured, the fable came to be delivered as matter-of-course, thus—

1839.—Formerly 5,000 died annually of Smallpox within the

London bills of mortality; but since Vaccination superseded Variolation, the number has gradually decreased, until it amounted to only 200 in the year 1837. In the course of the year that has terminated (during which Smallpox prevailed epidemically), there died 800; not one more, after all, than one-sixth of the number who died annually [that is to say, 4,800] during the prevalence of Variolation, notwithstanding the increased population of London and its environs. By a careful retrospect, we are, therefore, justified in stating that 4,000 lives are saved every year in London, since Vaccination so largely superseded Variolation.

The fall in smallpox that set in toward the close of last century was not confined to London, but extended to many European populations. It began before vaccination was heard of, and continued independently of it, though the vaccinators eagerly claimed the phenomenon as the result of their superfluous efforts. The claim was absurd as concerned London, for it plainly appears that vaccination during the years in question never overtook, or even approached, the metropolitan birth-rate. Here is the record of the vaccinations effected by the Establishment in five years—

1818	1819	1820	1821	1822	Total.
5,490	7,874	6,054	6,627	8,230	= 34,275

The entire vaccinations in five years not equalling the London births in any one year! There were, we dare say, as many more vaccinated by voluntary effort; but the figures, however extended, cannot be got to cover the immense mass of lower-class Londoners, who then, as now, were the chief factors of smallpox. What I say emphatically is, the National Vaccine Establishment had as much influence on London smallpox as the Holy Alliance.

POCK-MARKED FACES.

One of the arguments for vaccination at this day runs thus—"How do you account for the absence of pock-marked faces? When I was young, forty years ago, nothing was commoner than countenances disfigured by smallpox." Occasionally the reminiscence is tranferred to a mother or grandmother, who is reported to have

said that she remembered when every third or fourth person was pitted.

We need not take seriously the motherly or grandmotherly reminiscences, so apt to be touched with the glamour of years. Confining ourselves to living memories, the owners thereof may, perhaps, be surprised to learn that the transformation for which they personally avouch was effected before they were born, or were qualified observers; and before vaccination was sufficiently practised to have wrought the change; and here is the evidence, as set forth in the reports of the National Vaccine Establishment, and printed by order of the House of Commons. Under the following dates we read—

1822.—As a proof of the protecting influence of Vaccination, we appeal confidently to all who frequent theatres and crowded assemblies to admit that they do not discover in the rising generation any longer that disfigurement of the human face which was obvious everywhere some years since.

1825.—The deaths by Smallpox amounted to 1,299 in 1825, a much greater number than has been reported for some years past. From this melancholy statement it is impossible to avoid the conclusion that the lower orders of society continue to be prejudiced against Vaccination, and allow Smallpox to take its course.

And yet what argument more powerful can be urged in favour of Vaccination than the daily remark which the least observant must make, that in our churches, our theatres, and in every large assemblage of the people, to see a young person bearing the marks of Smallpox is now of extremely rare occurrence.

To what can the freedom from the vestiges of so loathsome a disease be attributed, but to the protecting influence of Vaccination? for Variolation has now been disused by all respectable practitioners for some time past.

1837.—The rarity of an example of disfigurement by Smallpox now to be found in the theatres, in churches, or in any large assemblage of the people, affords proof that Vaccination has lost none of its efficacy.

Pock-marked faces are by no means uncommon at this day in London, though their number has diminished through more careful nursing and the use of well-known means for preventing disfigurement; and whoever cares to pursue the inquiry will discover that the majority of the marked have been vaccinated and many re-vac-

cinated—a proof that it is not the rite which prevents the scars.

The general impression we derive from the reports of the Establishment, 1808-40, is that they proceeded from men who were committed to vaccination, but had no profound faith in its efficacy; who were averse from the admission of its impotence, and ultimately held by it as possibly the best available defence against smallpox. With ample means and opportunities for investigation, they made no discovery, nor achieved any advance in practice, nor apparently conceived that there was either discovery or advance to be made. They accepted smallpox as a mysterious ordinance of Nature, with cowpox for a probable antidote, and there stuck fast, thoughtless and helpless. They did not even observe that smallpox was specially a disease of the young and the poor, nor deduce conclusions therefrom. They had their money, and went through an appropriate routine, and there their action ended.

CHAPTER XXXVI.

THE NATIONAL VACCINE ESTABLISHMENT—1841-50.

ALONG with the prohibition of Variolous Inoculation in 1840, Parliament passed an Act for the provision of Vaccination out of the poor-rate. A scheme had been formulated and petitioned for by the Provincial Medical and Surgical Association in 1838, with the expectation that the Government might be induced to create a multitude of places for "regularly educated vaccinators, with suitable salaries, in districts sufficiently numerous to embrace the whole of the poor population of the country." The House of Commons being of a thrifty turn in those days, did not however favour such a magnificent development of place and pay under the National Vaccine Establishment, and disposed of the project by referring the provision of vaccination to the parochial authorities, who

might be trusted to do what was needful with due regard to economy. In every union, and in every parish that was not in union, it was provided that there should be one or more medical practitioners appointed by the Guardians for the gratuitous vaccination of the inhabitants, with remuneration from the rates according to the number operated upon.* This accession to their burdens met with anything but welcome from the ratepayers in general. Contracts for vaccination at so much per head were submitted for competition, and those who accepted the rite at the public expense were spoken of as paupers, and in some places had their names published to "shame them." To remove the stigma of pauperism from the parish prophylaxy, an Act was passed in 1841 in which it was declared that public vaccination was not of the nature of "parochial relief, alms, or charitable allowance," and did not therefore deprive the recipient of any "right or privilege," or subject him "to any disability or disqualification whatsoever." †

The reports of the National Vaccine Establishment from 1841 to 1850 continued to be of the same perfunctory character. They usually started with a profession of confidence in vaccination, after the fashion of Mrs. Micawber's resolution never to desert Micawber; the signature to which declaration by the President and Senior Censor of the Royal College of Physicians, and the President of the Royal College of Surgeons being accompanied with a douceur of £100 to each. For example, we read—

1841.—Smallpox has prevailed epidemically with considerable severity since our last Report; but we do not abate an iota of our confidence in Vaccination as the best protective against its malignant influence.

1845.—The unabated confidence with which we continue to regard Vaccination, etc., etc.

1847.—Nothing has occurred to diminish our confidence in the protective influence of Vaccination. It is true that Smallpox has now and then reappeared; and lately to an extent which has called

* 3 & 4 Vict., cap. 59. † 4 & 5 Vict., cap. 32.

for additional efforts on the part of all the officers of the Establishment; but we regard such recurrence as due to the ordinary operations of those periodical influences which give to the disease its epidemic character; and in some localities, as in Ireland, to that distress with which contagious diseases are so invariably associated.

The reporters apparently forgot that according to the doctrine of which they were the representatives, vaccination excluded the possibility of smallpox under whatever circumstances of atmosphere, filth, or privation. If only effective in the absence of the ordinary conditions of smallpox, wherein consisted the benefit of the rite?

Ceely of Aylesbury in 1839, and Badcock of Brighton in 1840, succeeded in inoculating cows with smallpox, and the resulting virus was described as cowpox, and used for vaccination far and wide. Apparently the procedure was not approved by the Vaccine Establishment, for we read in the report—

1841.—The matter we employ is obtained by succession from the original virus communicated by Dr. Jenner himself, and that we find is as effectual as ever. We may be excused therefore, we hope, if we discourage an incautious dissemination of matter obtained from new sources, which has not stood the test of ample experience.

The original virus communicated by Jenner himself! What was it? When the National Vaccine Establishment was instituted in 1808, the virus in circulation in London was accepted as stock, and it certainly had several origins. It was cowpox as discovered by Pearson; it was horsegrease cowpox and horsepox as derived from Jenner; and there is reason to believe it was smallpox from Woodville and others. The claim, therefore, to the possession of a specific variety of matter communicated by Jenner was fictitious.

Again, through the recurrent failure of vaccination to avert smallpox, the Board had to discountenance the assertion that their virus had lost its virtue through prolonged transmission—a reason which led some to prefer the fresh variolous stocks of Ceely and Badcock—

1840.—The experience of another year has afforded proofs of the propriety, in the present state of our knowledge, of preferring

Vaccine Matter, the produce of the original virus furnished by Dr. Jenner, which has now passed happily through successive generations of subjects in the course of 43 years, and which forms the principal source of our supply, to any which may have been recently taken from the cow.

Here we have "the original virus furnished by Dr. Jenner" set forth as no more than "the *principal* source of supply." The reports are characterised by many similar inconsistencies—

1845.—We regard as erroneous the belief that Vaccine Virus undergoes deterioration by being kept; in proof of which we are prepared to establish, by unquestionable documents, the striking fact, that Lymph which had been conveyed to and from India has retained its protective properties wholly unimpaired after a lapse of 20 years.

Another vexation of the Board was due to the assertion that the protective virtues of vaccination gradually wore out, and that the repetition of the rite was necessary for the maintenance of salvation. In the *London Medical Gazette*, 2nd August, 1844, it was proclaimed—

We are sorry to announce the extensive prevalence of Smallpox at this time among us. REVACCINATE, REVACCINATE, say we.

Such advice was essentially heretical and damnable; for Jenner affirmed and maintained—

That the human frame, when once it has felt the influence of the genuine Cowpox, is never afterwards, at any period of its existence, assailable by Smallpox.

If revaccination were possible, smallpox after vaccination was possible; and if so much were conceded, on what ground was vaccination to be defended? Whatever the facts, the members of the Board resolved to stand loyally by the primitive Jennerian doctrine, and in their Report for 1851 thus testified—

It may be expedient to remind the public of the established fact which the Board upon former occasions anxiously insisted upon, that the restriction of the protective power of Vaccination to any age, or to any term of years, is an hypothesis contradicted by experience, and wholly unsupported by analogy.

Notwithstanding the prohibition of Variolous Inocula-

tion, the Board had repeatedly to deplore its continuance especially in Ireland. Thus we read—

1850.—The Board again entreat the attention of the Government to the fact that Inoculation for the Smallpox still continues; and that the disease is communicated by vagrants to those unprotected by Vaccination in town and country. The contagion is carried throughout the land by wandering Irish, and no care, however great, can be successful in eradicating Smallpox, whilst the neglect of Vaccination and the practice of Variolous Inoculation are permitted in Ireland.

It was Jenner's practice to attribute to wilful blindness and innate depravity any scepticism as to the efficacy of vaccination; and throughout the Reports of the Establishment this habit of imputation was maintained. Vaccination was treated as a sort of divine revelation, plenary and manifest, which could only be disputed or resisted from deliberate perversity, or, more charitably, from abject dulness or ignorance; and it would be easy to construct a catena of piquant deliverances under this semi-theological persuasion. Such observations as the following were of the order of matter-of-course—

1850.—We regret to learn that in our own country the spread of Vaccination is still materially impeded by influences emanating from ignorance and prejudice in the lower orders, and from prejudices in many who cannot plead the excuse of ignorance.

1851—It is lamentable to observe not only the indifference, but the active hostility displayed by the community to Vaccination. Deeply-rooted prejudices and absurd superstitions are ever opposing its adoption.

The Reports of the Establishment year after year displayed in full measure the familiar complacency of official routine—where pay is constant and wheels propelled from office desks revolve smoothly in space—so many Londoners vaccinated, so many charges of virus distributed, and confidence in the sacred prophylactic unabated. A revolution was, however, impending. The attitude of the public mind toward disease had become transformed. Faith in sanitation as a preventive of fevers had been created, and a popular demand for sani-

tary improvement had set in. Under cover of this new enthusiasm some of the shrewder advocates of vaccination conjectured that it would be possible to effect its endowment and establishment on a scale hitherto unattempted in England. It was true that vaccination had no relation to sanitation; but the reforming and philanthropic mob were madly in favour of whatever bore the promise of health, and were not likely to show themselves hypercritical or obstructive.

The first movement toward a new advance is discernible in the Report of the Establishment for 1850 wherein we read—

> The Board have had to solicit the attention of Her Majesty's Government on several occasions to the deplorable fact that a very large proportion of the children of the poorer classes in the Metropolis, and in England and Wales generally, but above all in Ireland, remain year by year without the benefit of Vaccination. Their testimony on this important part of the sanitary condition of the population has been derived from the reports of numerous competent medical witnesses in all parts of the United Kingdom, and from the frequent recurrence of rapid and fatal invasions of Smallpox, to which their attention has been repeatedly called by urgent applications for Vaccine Lymph. It is satisfactory to find that the representations which the Board have made are most unequivocally confirmed by the report of Mr. Grainger, from which it appears that the number of persons under one year who were vaccinated during the year ended 29th September, 1848, in 627 Unions of parishes in England and Wales (exclusive of those vaccinated at the cost of their parents) amounted to no more than 33 per cent., compared with the total number of births registered in the same period.

These figures are worth noting. Dating from 1840, an effort was made to overtake the vaccination of the people by the agency of the poor law; and yet so late as 1848, not more than one-third of the children born were accounted for as Jennerised. Adding to this third the offspring of the upper and middle classes, we may safely conclude that up to 1850 not half the inhabitants of England and Wales were vaccinated; and the unvaccinated half included the lower classes most subject to smallpox—victims of that "distress with which contagious diseases are so invariably associated," to cite the

words of the Report for 1847. The point is especially worth noting because the decline of smallpox, which set in last century, is continually ascribed to vaccination. A true cause however must be commensurate with the effect; and yet here we see the asserted cause of the fall in smallpox did not apply in 1848 to half the English people; in which half, moreover, lay nine-tenths of the field in which smallpox was possible. The Report for 1850 continues—

> The Board lament that they have no means of adopting or enforcing such measures as are obviously necessary for the prevention of Smallpox. They have no power of instituting domiciliary visits, or house to house visitation; and indeed hitherto such have been deemed too much of an encroachment on the liberty of the subject. They have no power to punish officially the practice of illegal Inoculation, or the exposure of infected persons; and they have only had the means granted to them of prosecuting such offenders in two cases, in order to establish the fact of the illegality of Variolous Inoculation. They can only recommend and aid, but they cannot enforce Vaccination.
>
> The progress of Vaccination is more rapid in Foreign Countries where municipal measures or legislative enactments are adopted to promote its dissemination; and they beg to express their conviction that if England is to be free from Smallpox, the interposition of the Legislature alone, by wise and comprehensive measures, can disarm the Pestilence of its terrors, and realise the fond hopes and prayers of the Friends of Humanity for its extinction.

In these observations is revealed the movement of a new spirit—of a revived resolution to obtain for vaccination the force of law. Similar projects had from time to time been advanced by enthusiasts, and swept aside by statesmen. Canning, for instance, had declared that he could not imagine any circumstances whatever that would induce him to consent to the compulsory infliction of vaccination; and, at a later date, Sir Robert Peel expressed himself to like effect, saying, "To make vaccination compulsory, as in some despotic countries, would be so opposite to the mental habits of the British people, and the freedom of opinion wherein they rightly glory, that I never could be a party to such compulsion."* But

* *Report of Royal Jennerian and London Vaccine Institution*, 1853.

Peel died in 1850, and a strong public opinion in favour of sanitary reform had come into existence without much scruple as to methods. Diseases, hitherto regarded as supernatural inflictions, were traced to conditions of life, remediable or avertible; so that the submission and terror which sickness formerly inspired gave place to widely different sentiments—a temper of intolerance with illness, and a determination to extirpate its infectious forms with those who in ignorance or wilfulness should persist in their generation and diffusion.

CHAPTER XXXVII.

VACCINATION ENFORCED—1853.

VACCINATION, it will be objected, had no connection with sanitary reform. True: it had none; but the dull public when possessed with a new enthusiasm is not apt to discriminate; and those who had an interest in pushing vaccination found their operations facilitated by the rising faith in the preventibility of disease; their promise of saving the country from smallpox seeming of a piece with much else that had become credible.

Yet, strange to say, the credit of vaccination had never fallen lower than prior to its enforcement. The proof is written at large in the reports of the National Vaccine Establishment from 1831 to 1850, which it is difficult to peruse without perceiving them to be the testimonies of half-hearted officials to a generation grown sceptical and indifferent. The medical literature of the time reflects the same uncertainty and doubt. Vaccination was admitted to be no sure defence against smallpox: it might, it probably did, mitigate the disease when it occurred; and, in the absence of anything better, its practice was advisable; but on such terms, what scope was there for its advocacy! In the writings of Dr. George Gregory, this scepticism is so pronounced, that he scarcely hesitates to

recommend a reversion to inoculation with smallpox. A like scepticism as to the virtue of vaccination with a like disposition to return to variolous inoculation, is exhibited by Dr. Copland in his *Dictionary of Practical Medicine*, 1844-58—a work of high repute, and the standard of medical opinion for the time. In short, vaccination was subject to general distrust; every claim made for it had been belied; and except for its endowment by the State, and the determination of sundry adventurers to have that endowment enlarged, the practice would gradually have fallen into disuse.

The same absence of confidence in vaccination was conspicuous in the school of sanitary reformers. It was of the essence of their revelation that smallpox was as preventible as other fevers, and by the same methods. I might, indeed, challenge any one to produce aught from the utterances of the early apostles of sanitation in deliberate or explicit praise of vaccination. The prescription might not be formally condemned; it might even be cursorily approved; but it was foreign to the tenor of their doctrine, and its recommendation must have died in their throats. Dr. Southwood Smith delivered two lectures in Edinburgh in 1855 on the Prevention of Epidemics, but of smallpox as preventible by vaccination he said not a word. On the contrary, this was his testimony, his all inclusive testimony—

> Overcrowding we can prevent; the accumulation of filth in towns and houses we can prevent; the supply of light, air, and water, together with the several other appliances included in the all-comprehensive word CLEANLINESS, we can secure. To the extent to which it is in our power to do this, it is in our power to prevent epidemics.
>
> The human family have now lived in communities more than six thousand years, yet they have not learnt to make their habitations clean. At last we are beginning to learn the lesson. When we shall have mastered it, we shall have conquered epidemics.

Among the upper and middle classes distrust in vaccination was general. How, indeed, could it be otherwise? All were vaccinated, yet whenever smallpox was epidemic, recipients of the rite enjoyed no immunity. In

one of Miss Mitford's letters we find an experience and a judgment which were far from uncommon. Writing, 1st February, 1850, she observed—

> About two months ago, my man, a very steady and respectable servant, was seized with Smallpox after Vaccination. He was very, very ill, delirious nearly a fortnight, and not a nurse could be had for love or money. I have lost all faith in Vaccination, either as preventing or mitigating Smallpox. I know of thirty severe cases this winter, five of them fatal, in my own immediate neighbourhood, and in Reading it has been a pestilence.*

Vaccination among the poor was (as it is) detested. Coaxed or forced into its reception without consideration or preparation, like sheep or cattle, they realised its mischiefs and misery in full measure; and naturally, whenever pressure was relaxed, avoided its acquaintance.

How then did vaccination come to be imposed upon a community thus affected? The answer is the usual one, illustrated continually in English politics: an organised interest, possessed with a definite intention, can always prevail over the public—careless, uninstructed, and without positive conviction. Under such circumstances, it is a mere question of management what may be achieved in Parliament at variance with the common welfare. Those there get, who know how to take.

All trades and professions fulfil the law of their being in striving after advantage and extension. The clergy and the clerically-minded laity are persuaded that to multiply churches and provide stipends, is to prepare for the millennium, and nothing save hopelessness prevents demands upon the national exchequer for the purpose. The sacrifices the army and navy would exact on their own behalf for security from foreign aggression are only limited by the public incredulity. The commercial classes are free-traders in principle; but if a protective bounty could be had for any manufacture, it would be instantly grasped at by those concerned, and most ingenious reasons invented to justify that particular departure from the rule of justice. This tendency of interests to aggrandise

* *Memoirs.* By C. Boner. Vol. i. p. 176.

themselves, *per fas et nefas*, at the public expense, is recognised by all statesmen, and is only kept in check by perpetual vigilance.

What is true of all, is true of the medical profession, crowded with competitors eager for employment. Vaccination as a branch of business, capable of development and endowment at the public cost, was certain of vigorous promotion whenever there was opportunity; but not until 1853 did the way open for the compulsory infliction of the Jennerian rite. The undertaking was hazardous. The opposition to which Canning and Peel had given expression, had to be circumspectly encountered. It was a job that might easily be wrecked; and therefore it was considered inexpedient that the medical corporations should appear too openly in the transaction. Instead, a committee was formed in 1850 under the title of "The Epidemiological Society for the Investigation of Epidemic Diseases," with a number of suitable decoys, and ostensible occupation; but chiefly designed as an instrument wherewith to operate on Parliament for the better establishment and more liberal endowment of vaccination.

It was resolved to proceed tentatively—to secure if possible the affirmation of compulsion, allowing the shock of innovation to subside before going on to provide the effective means of espionage and persecution. As it turned out, the caution exercised was superfluous. Much more might have been demanded and conceded of the ignorance and indifference of the legislature. Lord Lyttelton was selected to introduce what was called the Vaccination Extension Bill, and in moving the second reading in the House of Lords on 12th April, he ingenuously disowned any qualification for the task, saying—

> I have no scientific knowledge of the subject myself, and for my information I am indebted to some able and learned persons belonging to the Epidemiological Society—

Adding in proof of the manner in which he had been crammed by the said "able and learned persons"—

> It is unnecessary for me to speak of the certainty of Vaccination as a preventive of Smallpox, that being a point on which *the whole medical profession have arrived at complete unanimity!*

The statistics with which Lord Lyttelton supported the necessity for compulsion are interesting as indicating the extent and irregularity of vaccination among the English people. He said—

We are told that the number of births registered in England and Wales in the year ending 29th September, 1852, was 601,839, and the number vaccinated under the Act of 1840 was 397,128; so that, in round numbers, 400,000 were vaccinated by the machinery in force, leaving only 200,000, or one-third of the whole number, to be treated by private vaccination. There are several fallacies in that statement. The general result is by no means the consequence of anything like a uniform system throughout the country. I have before me a detailed statement of the extent of Vaccination in various parts of England in 1851, which shows there is great want of uniformity in certain districts. In towns where people have a shorter distance to go to get their children vaccinated, the result is more favourable than in the rural districts. For example, in Birmingham, on the total number of births in 1851, the vaccinations were 91 per cent.; in Leicester they were only 41 per cent.; and in Loughborough only 18 per cent. The contrast between the manufacturing and the rural districts is favourable on the side of the former. In Bideford, the vaccinations were only 11 per cent. upon the births; in West Ashford in Kent, they were only 22 per cent.; and in Winchcomb only 6 per cent. While the general average is lower in the agricultural than in the manufacturing districts, some contrary instances are found. Thus in Derby the vaccinations are only 42 per cent.; while at Watford, which is a rural district, the vaccinations were 126 per cent. upon the births in 1851—which included, of course, the vaccination of children born in previous years. But in London, and in no less a parish than that of St. James, Westminster, it is reported that in 1851 on 973 births only 44 vaccinations took place; while in Wellingborough Union, where there were 800 births in 1851, no vaccination at all is reported!

Strange to say, Lord Lyttelton made no attempt to complete his argument. He ought to have shown that in the places where vaccination was least practised there was most smallpox, and where most practised there was least smallpox. Had he made the attempt, his eyes might have been opened to the untrustworthy character of "the able and learned persons" by whom he had been mendaciously primed.

Lord Shaftesbury, in supporting the measure, adduced similar instances of neglected vaccination as follows—

	Births 1851.	Vaccinations.
Paddington	... 1458	... 386
Hampstead	... 286	... 93
Huntingdon	... 805	... 68
St. Neots	... 671	... 17
Carnarvon	... 929	... 125
Bangor and Beaumaris ...	... 1025	... 420
Newton Abbott	... 1563	... 150

He, too, forgot to show that these places were "decimated" (that's the word) with smallpox, whilst other places where vaccination was generally practised enjoyed exemption. On the contrary, with curious inconsequence, he went on to recommend a sure prescription of his own, namely, improved dwellings for the poor. These were his words—

It is perfectly true that Smallpox is chiefly confined to the lowest classes of the population; and I believe that *with improved lodging-houses, the disease might be all but exterminated.*

Not a doubt of it; but if improved lodging-houses would "all but exterminate smallpox," why resort to such a superfluity as vaccination?

There was no adverse discussion—indeed, no discussion whatever. Lord Ellenborough observed of the Epidemiological Society, under whose direction they were legislating, that he "would not adventure upon the extraordinary name by which the members are designated." The bill was read for the third time, *nem. diss.*, on 18th April, and was introduced to the House of Commons on 5th May, where its course was as uninterrupted as in the Lords. Sir John Pakington, in moving the second reading on 20th July, pleaded like Lord Lyttelton his own ignorance, and the evidence and authority of the Society with "the extraordinary name," thus stating the case—

An Act was passed in 1840, by which Boards of Guardians were authorised to defray the expenses of Vaccination in their respective unions. The Poor Law Board have done all in their power to carry out the provisions of the Act; but still the grave fact remains, that the system is voluntary: that in many places the people are prejudiced; that a large proportion of the population is not vaccinated; and that mortality from Smallpox exists to a very great extent.

In the year ending March, 1843 out of 527,325 born in England and Wales, only 183,000 or 34 per cent. were vaccinated. In the succeeding years the vaccinated stood to the unvaccinated in the following ratio:—

1844-45, ... 100 to 156 | 1845-46, ... 100 to 134

In 1846-47 the births were 552,000 of which only 267,000 were vaccinated, or about 50 per cent. of the whole. In consequence, however, of stimulus applied by the Poor Law Board, two-thirds of the births in 1847-48 were accounted for as vaccinated; but still in many parts there prevails excessive neglect. For example, so late as 1851 in 32 unions in and around Birmingham, the births were 17,700 while the vaccinations were only 6,174—two-thirds being unvaccinated.

Here, too, we note the omission of proof, that where vaccination was neglected smallpox was prevalent, and where practised smallpox was absent. Lord Palmerston supported the second reading without hesitation. Sir George Strickland was the only dissentient, saying—

Sir John Pakington has himself supplied the strongest reason why the bill should not pass. He has shown that Vaccination as at present conducted is working well; but because some mothers object to the practice, we are to be saddled with a compulsory law. We are too prone to resort to force to overcome resistance, which would yield to reason with the exercise of patience. What need is there that we should imitate the legislation of Saxony, or Austria, or Prussia in such a matter? In this country we cannot have one law for the poor and another for the rich, and yet here we are asked to apply a measure to the former which we could not think of for the latter. How can we expect to abate prejudice against Vaccination by compulsion? If we acted more on the old English principle of leaving people to secure their welfare by their own good sense, we should in the end achieve our purpose much more successfully.

The bill was read for the third time in the House of Commons without debate on the 13th, and received the royal assent on 20th August, 1853. In short, it passed through Parliament without opposition. What, it will be asked, were its provisions?

By the Act (16 and 17 Vict. cap. 100) it was required—

1. That every child, whose health permits, shall be vaccinated within three, or in case of orphanage within four months of birth, by the public vaccinator of the district, or by some other medica practitioner.

2. That notice of this requirement, and information as to the local arrangements for public vaccination, shall, whenever a birth is registered, be given by the registrar of births to the parents or guardians of the child.

3. That every medical practitioner who, whether in public or private practice, successfully vaccinates a child shall send to the local registrar of births a certificate that he has done so; and the registrar shall keep a minute of all the notices given, and an account of all the certificates thus received.

4. That parents or guardians who, without sufficient reason, after having duly received the registrar's notice of the requirement of Vaccination, either omit to have a child duly vaccinated, or, this being done, omit to have it inspected as to the results of Vaccination, shall be liable to a penalty of £1; and all penalties shall be recoverable under Jervis's Act, and shall be paid toward the local poor-rate.

Thus from 1853 every English parent became liable to a fine of twenty shillings and costs who refused or neglected to have his child vaccinated within three months of birth. It may seem surprising that an Act so arbitrary, enforcing an indefinite medical prescription (for Vaccination was *not* defined, and Vaccination *is* a rite of several varieties) should have been passed so lightly; but we have to recollect the circumstances. The House of Commons in those days was the house of the upper and middle classes, and was as little affected as the House of Lords itself by the proposed legislation. It was an Act for application to the vulgar—to the prejudiced, whose prejudices were to be encountered, not with arguments, but with fines; an illustration of the levity with which the unconcerned can dispose of the opinions and feelings of those to whom they owe no allegiance. Since that time the working-classes have plainly discovered that they only obtain consideration in Parliament in so far as they can make their power felt in the constitution of Parliament. No rights are secure that cannot be enforced, nor any justice certain that cannot be vindicated. Those who hold their ground by any other tenure than their own intelligence and vigour are liable to continual imposition and depredation.

> The good old rule, the simple plan,
> That they should take who have the power,
> And they should keep who can—

is the abiding social law, however veiled or elevated in application.

Again we have to recollect, that in 1853 there was no developed or scientific resistance to vaccination. As to the nature and value of the practice there was wide diversity of opinion, notwithstanding Lord Lyttelton's affirmation of the complete unanimity of the medical profession; but although such scepticism was general, the rite constituted an established poll-tax among the respectable classes, which sort of thing is never readily surrendered. Hence it seemed less unreasonable to enforce the like observance on "the ignorant and prejudiced" at the cost of the poor-rate. When Canning refused to consent to compulsion in 1808, cowpox had a competitor in smallpox inoculation; and Peel in his later protest expressed the preference of an expiring generation for living English liberty over cut-and-dry subservience. Despotic philanthropy was coming into vogue, and it was no longer thought impracticable or inexpedient to do good to people in spite of themselves. There was therefore little to be said against the Act of 1853 beyond what Sir George Strickland expressed. The right of the prejudiced and ignorant to the enjoyment of their prejudice and ignorance had become obsolete and indefensible.

The report of the Epidemiological Society was taken as the warrant for the Act of 1853 alike by the Lords and Commons. Turning to that report,* it is difficult in a few words to convey an adequate idea of its untruthful character. Whoever, it is said, wills the end wills the means; and certain medical men having resolved to make vaccination compulsory whatever was requisite

* *Letter from Dr. Edward Seaton to Viscount Palmerston with Report on Smallpox and Vaccination in England and Wales and other Countries, and on Compulsory Vaccination, with Tables and Appendixes presented to the Epidemiological Society.* Ordered by the House of Commons to be printed, 3rd May, 1853.

had to be accomplished; and Dr. Seaton undertook the operation, the Epidemiological Society, of which he was "the ruling spirit,* playing the part of guarantee. For the persuasion of the Lords and Commons, an advocacy of vaccination without hesitation or qualification was deemed advisable, and the line was thus followed up—

Smallpox is a disease to which every person is liable who is not protected by a previous attack or by Vaccination. In its unmodified form it is fatal to about one in four or one in five of all whom it invades; and, when it does not destroy life, it in many cases disfigures and deteriorates the general health. Every case of it is a centre of contagion, and every unvaccinated or imperfectly vaccinated population is a nidus for the disease to settle in and propagate itself. It is on the two latter propositions, which do not admit of being controverted, that we conceive any enactment for rendering Vaccination compulsory must be based. If it admit of doubt how far it is justifiable in this free country to compel a person to take care of his own life and that of his offspring, it can scarcely be disputed that no one has a right to put in jeopardy the lives of his fellow-subjects.

All will recognise the authoritative air of the foregoing, so impressive where nothing better is known; but the indisputable proposition, "that no one has a right to put in jeopardy the lives of his fellow-subjects," was curiously inconsistent with faith in the asserted prophylactic; for if the vaccinated were secure from smallpox, how could the unvaccinated place their lives in jeopardy? The style assumed was thus maintained—

We are ourselves satisfied, and it is the concurrent and unanimous testimony of nearly 2,000 medical men with whom we have been in correspondence, that Vaccination is a perfectly safe and efficient prophylactic against this disease.

This proposition we hold to be proved—

1. By the general immunity with which it is found that those who have been vaccinated can mingle with Smallpox patients, a fact so familiar that we do not feel that we need adduce any illustration of it.

2. By the gradual decrease which has taken place in the mortality from Smallpox, as compared with the mortality from all causes, since Vaccination has been introduced and been generally received.

† *British Medical Journal*, 3rd July, 1880.

As to the immunity of the vaccinated, it was disproved in every smallpox epidemic, and in every smallpox hospital, and by the precautions and terrors of those accounted secure. To sustain the proposition that smallpox had decreased in consequence of the introduction of vaccination, a variety of statistical tables were adduced, English and Continental; but had the Lords or Commons subjected them to scrutiny they would have discovered that the details were either irrelevant or adverse to the conclusion asserted. Many of the statistics, especially of last century, were not certainties, but conjectures and estimates, vitiated, too, with the bias of their compilers. When it is said that smallpox decreased in consequence of the introduction of vaccination, the answer is that smallpox was decreasing prior to its introduction in almost every country of Europe; and that the decrease continued irrespective of its influence, save in so far as it might have discouraged the culture of smallpox by inoculation. To illustrate this contention it may suffice to take the table of London Smallpox set forth by Dr. Seaton, in which the average of deaths from Smallpox in every 1000 deaths from all causes was contrasted in decennial periods for fifty years, prior and subsequent to the introduction of vaccination.

Prior to Vaccination.			Subsequent to Vaccination.		
Ten Years ending—		Deaths from Smallpox.	Ten Years ending—		Deaths from Smallpox
1760	...	100	1810	...	64
1770	...	108	1820	...	42
1780	...	98	1830	...	32
1790	...	87	1840	...	23
1800	...	88	1850	...	16

The figures are far from trustworthy, but taking them as they stand, and admitting the decline, where was the proof that it was due to vaccination? The introduction of that practice was one thing: its application quite another. There was no reason to believe that more Londoners were vaccinated in 1820 than in 1810, or in 1840 than in 1830; indeed, the available evidence went to the contrary, vaccination having fallen in repute after

the furore of 1801-5, and the demonstration of its impotence and its injuriousness. Probably not ten per cent. of the births in London up to 1840 were accounted for as vaccinated; and notwithstanding the provision of vaccination at the cost of the poor-rate by the Act of 1840, not fifty per cent. in 1850. Yet to a cause so utterly inadequate, the steady decline in London Smallpox was ascribed! The same fallacy pervaded the statistics of other countries and cities, yet so strong was the prepossession in favour of the conclusion determined upon, that it was apparently neither seen nor suspected, obvious though it was.

Nor was it surprising that with a disposition so fixed and obtuse, no enlarged or philosophic views should have been entertained. "Smallpox," said Dr. Seaton, "had decreased compared with mortality from other causes." True; but what if mortality from other causes had compensated for the decrease of smallpox? and if such compensation had taken place, as, for example, in Glasgow, in what consisted the advantage? Again, no reference was made to illness and death resulting from vaccination, as if the rite were harmless as baptism. Allowing that the practice did in some occult fashion tend to the abatement of smallpox, it was still open to question whether the infliction of an acute specific disease on all sorts and conditions of infancy was not likely to be far more injurious to life than the smallpox it was supposed to avert. Such considerations, however, were foreign to Dr. Seaton and his Epidemiological Society with whom vaccination stood for little else than an extension of medical business at the public cost.

It is not to be forgotten that the Act of 1853 brought to fruition what was long hankered after by the trade spirit of the medical profession. The Act of 1840 endowed vaccination out of the poor-rate; but to make the rite compulsory and to ensure good pay for its performance was the consummation desired. The terms and conditions that ensued on the Act of 1840 are thus described by Dr. Seaton—

The fee paid in England and Wales varies from 1s. to 2s. 6d., never falling below or rising above those sums. In 1842 and 1843, the Commissioners estimated the average fee at 1s. 9d. From our inquiries, it appears that in the large manufacturing towns the fee varies from 1s. to 1s. 6d.; the larger sums of 2s. and 2s. 6d. being paid for the most part in country towns. In London, the more ordinary fee is 1s. 6d.; in several parishes 2s. 6d. is paid; and in one, 1s. In some few unions a bad principle obtains of paying a larger sum for a certain number of cases, as 50, and a smaller sum for all above. The average payment per case for the whole of England and Wales from 1841 to 1851 inclusive, was 1s. 5½d.

In Ireland, the payment appears to be very low. The more general sum is 1s., often 6d.; in three or four instances, 3d. and 4d. The vicious principle just noticed, of paying a higher fee for a limited number of cases, seems to be almost universal. Thus, where 1s. is the fee, this is paid for the first 200 cases, and 6d. for all above. In one case, Nenagh, 1s. is paid up to 200, and 1d. for all above. In other cases, 3d. and 4d. are paid for all above a certain number. Whilst this pitiful remuneration exists, it is not surprising to find that in many districts the medical practitioners decline the appointment, leaving the people unvaccinated.

According to the information we have received, it is found, as might be anticipated, that on the whole Vaccination is more efficiently carried out in the districts where the higher fee of 2s. 6d. is paid; or where, as in large towns, the number and proximity of children compensate the vaccinator in some degree for lower payment.

The better pay, the better vaccination! The object of the Epidemiological Society, as the stalking-horse of the medical trades-unions, lay in those fees. Vaccination was a pretext for a universal poll-tax, set at as high a figure as practicable, to be succeeded when possible by compulsory revaccination, with a correspondent tariff annexed. Recalling the early days of vaccination when the operation was described as simplicity itself, and when women, parsons, and busybodies inoculated and propagated "the benign fluid" under Jenner's authority, it was remarkable to have the rite thus formalised and converted into the peculium of a priesthood. Nor can it be objected that when vaccination was thus practised, it was ineffective against small-pox; for whenever its virtue is brought into dispute, we are referred to those primitive times and that primitive

practice for the most successful and unquestionable exhibitions of its power.

Caveat emptor is a well-recognised caution, which to avoid was the purpose of the Epidemiological Society. A mercantile transaction was carried out under the cloak of impartial science. No reader of Seaton's report could suppose otherwise than that vaccination was universally regarded as an infallible preventive of small-pox, and that if by any means the English people could be subjected to its observance, they would obtain immunity from the disease. Evidence to the contrary was kept out of sight; and yet evidence to the contrary lay within the knowledge of every medical man; and proof might be adduced to weariness from contemporary medical literature to show that in this respect the Epidemiological report was contrived to blind and mislead Parliament. As a witness, none will impugn Sir Henry Holland, and writing in 1839 he observed—

> Not only in Great Britain, but throughout every part of the globe, we find that Smallpox has been gradually increasing in frequency as an epidemic; affecting a larger proportion of the vaccinated; and inflicting greater mortality in its results.
>
> The early enthusiasm for the great discovery of Jenner swept doubts away; and they returned only tardily, and under the compulsion of facts. . . . Any explanation from the ignorant or imperfect performance of Vaccination was found insufficient to meet the number and variety of the proofs. And, though more palpable at one time than another, according to the greater or less prevalence of epidemic causes, yet every succeeding year has multiplied them, and every statement from other countries attested their truth.
>
> It is no longer expedient, in any sense, to argue for the present practice of Vaccination as a certain or permanent preventive of Smallpox. The truth must be told, as it is, that the earlier anticipations on this point have not been realised. . . . Whether Smallpox may ever be wholly eradicated is a very doubtful question, and the probability is on the negative side.*

In statements like these, Dr. Holland did no more than express the contemporary conviction of the medical profession. Vaccination was not surrendered: whilst it was

* *Medical Notes and Reflections.* By Henry Holland, M.D., F.R.S. London: 1839. Pp. 401, 415, 416.

allowed that it could not be trusted to prevent smallpox, it was held that it made the disease milder, and that whilst its prophylaxy wore out, it was renewable by revaccination. Obvious it was that vaccination thus qualified could never obtain legislative sanction; but such sanction being imperatively demanded, the Epidemiological Society provided what was thought requisite for Parliamentary conviction.

It is said that Vaccination was a medical question; but all questions are transformed when they ascend to politics. The origin, character, and action of varieties of animal virus are mysteries, and may remain mysteries with general indifference; but when it is claimed that the inoculation of such virus prevents smallpox, and that whoever refuses to submit his child to the said inoculation shall be fined 20s., then the matter is brought within the personal jurisdiction of every citizen, and he becomes entitled to information, to the exercise of his judgment, and the expression of his opinion. As a mystery, vaccination belongs to experts; but as a Parliamentary preventive of smallpox it is within the discrimination of all who can observe and appreciate the evidence of numbers. For a legislator like Lord Lyttelton to confess his ignorance, and that he moved under the dictation of certain "able and learned persons," was to abandon his proper function, and surrender himself to imposture.

CHAPTER XXXVIII.

UNIVERSAL COMPULSION DEMANDED—1855.

UNDER the terror of the 20s. fine, proclaimed everywhere by vaccinators voracious for fees, a prodigious extension of practice was effected in 1854. The vaccinations under one year of age were more than doubled; and nearly 300,000 children above one year old, to whom the law did not apply, were driven into the net, and "cut for the

pox" at the public expense. Thus the public vaccinations of 1854 exceeded the births of that year by 75,000. Subsequently the rate fell off and fluctuated as appears from the following table for England and Wales—

Years.	Births.	Public Vaccinations.	Years.	Births.	Public Vaccinations.
1853	601,223	376,218	1857	649,963	423,421
1854	623,699	698,935	1858	654,914	468,008
1855	623,181	464,099	1859	669,834	455,349
1856	640,840	435,012	1860	689,060	494,942

Yet this extension of practice did not satisfy the medical adventurers of the Epidemiological Society. They pointed out that universal vaccination was the desideratum, and these results fell short of universality—

> The Act of 1853 was intended to apply not to 65 per cent. of the births, but to every child born. A certain deduction, it is true, must be made for those privately vaccinated; and whilst there are no data for exactly estimating the proportion of these (which probably varies considerably in different parts of the Kingdom); yet taking the country throughout, there is reason to believe that not more than from 10 to 15 per cent. of the children born are so vaccinated; for it is found that in unions where particular care is bestowed upon public vaccination, the number publicly operated on is from 85 to 90 per cent of the births. If we estimate 80 per cent. only, as the number requiring to be provided for by public vaccination, the results of last year [1854] fall short of those which should be attained by nearly 100,000.

This estimate is worth attention as sustaining a conclusion I have repeatedly tried to enforce. Prior to 1840, vaccination was a matter almost exclusively of private concern, extending to no more than 10 or 15 per cent. of the population—or, let us allow, 20 per cent.—and those chiefly the well fed, well clad, and well housed. Yet the diminution of smallpox, dating from a period in last century when variolous inoculation was in full practice and cowpox was unknown, is persistently ascribed to the introduction of vaccination which up to 1840 did not apply to more than one-fifth of the people; the four-fifths exempt from the prophylaxy being notoriously the chief factors of the disease!

Parliament having so readily consented to the Compul-

sory Act of 1853, it gave cause for acute chagrin that more had not been asked, when more might so easily have been had; and the operators behind the Epidemiological Society set to work to try whether the lost opportunity might not be retrieved. In a Memorial addressed to the President of the Board of Health in the name of the Society, in 1855,* we find a project developed which lacked nothing of audacity and comprehensiveness. First, the virtue of vaccination was asserted in unqualified terms—

> Smallpox is the most preventible of diseases, differing from all other epidemic diseases in this remarkable respect, that while these latter can only be prevented by discovering and remedying the various conditions (as of crowding, want of drainage, filth, and the like) which give rise to or assist in the dissemination of the specific poison of each disease, the former may be guarded against and prevented by a direct prophylactic measure. To Smallpox, in short, there is an antidote. The same cannot be affirmed, in the present state of knowledge, of any other epidemic disease.
>
> That antidote is Vaccination. In exact proportion as this has been efficiently practised, have the extent and severity of Smallpox been diminished over the surface of the world. To the neglect of it, or to its inefficient performance, is due the large existing mortality from the disease in this country.

Evidently the advice, *Pecca fortiter*, had been laid to heart by the framer of the preceding declaration. Certainly the scheme for which it stood as preamble required violent justification. It was no less than the institution of a Vaccination Office with despotic powers as a department of State. The appointment of public vaccinators subordinate to the Board of Guardians, subject to contract, and paid out of the poor-rate, was held to be a degrading form of service: it prejudiced vaccination as a form of alms, and reduced medical men to the rank of parochial officers. Worst of all, the pay was bad—

> The provisions for the remuneration of public vaccinators have not been such as to secure their hearty and zealous co-operation.

* *Memorial presented to the President of the Board of Health, by the President and Council of the Epidemiological Society, on a proper State Provision for the Prevention of Smallpox and the Extension of Vaccination.* Ordered to be printed by the House of Commons, 1st March, 1855.

The most injurious consequences have undoubtedly resulted from this, both in limiting the numbers vaccinated, and in discouraging the vaccinators from giving that pains and attention to watch the progress of the Vaccine Disease which are imperatively necessary.

They must, therefore, be emancipated. An independent organisation, with a medical chief, was essential alike to the mystery and dignity of the craft, and the universal and efficient exercise of its functions. To save the country from smallpox, two conditions were requisite—

First, that it be made a matter of legal obligation on all persons resident within England and Wales, whether born within that portion of the Kingdom or not, to give evidence of being vaccinated.

Second, that to achieve this end, there be provided administrative science, zeal, and activity.

The union of these conditions is indispensable; either without the other will fail.

It was pointed out that the Act of 1853 only applied to children born in England and Wales after a certain date—

It does not extend to the whole existing population, nor to immigrants. It is well known that Smallpox is largely imported into this country, and kept up from Ireland. These Irish not only form a nidus for the disease in towns where they collect in large numbers, but they disseminate it throughout the country at harvest time, and in the season of hopping.

To fight and overcome smallpox, to meet and arrest epidemics, the law must be administered by qualified, zealous, and "adequately remunerated" officers; but "the keystone to any effective system" must be a commander-in-chief—

No compulsory enactment, however comprehensive and stringent; no alteration in the mode of appointing public vaccinators, however desirable; no additional remuneration and encouragement to them, however necessary, will be sufficient to secure the grand object to be had in view, the Universal diffusion of Vaccination and the Extinction of Smallpox, unless there be some competent and energetic Medical Officer to harmonise the whole system and keep it in constant activity; to examine continually its working, that what is defective may be immediately supplied; and, in cases in which it is required, to enforce the law, whether against those who refuse to submit themselves to Vaccination, or against those who, by travelling about, diffuse Smallpox throughout the Kingdom.

It was further said, "The changes thus proposed *have long been looked forward to* by the president and council of the Epidemiological Society as essential to a proper system of public vaccination"—of which, indeed, there was no doubt; for to effect the said changes was the chief end of the Society and of its ruling spirit, Dr. Edward C. Seaton. Though it may seem incredible, it will not surprise any who have studied the habit of the thorough-bred quack, that the designated commander-in-chief, "the keystone of the system," the miraculous combination of scientific and administrative ability, was none other than the projector, Dr. Seaton himself! He it was who in fancy saw himself the elected head of the New Vaccination Office, with place and pay at his disposal, and power to examine and vaccinate every resident upon English soil.

The Memorial concluded with the opinion that in view of "the continued high rate of mortality from smallpox," some measure should be concerted "for carrying out the alterations suggested during the present (1855) session of Parliament."

It goes without saying that the project developed in the Memorial was an impracticability; and that it should have been "long looked forward to by the president and council of the Epidemiological Society" proves what manner of dreamers they were. The mortality from smallpox in England and Wales constituted, they said, 2 per cent. of the national mortality; but not even the reduction of the 2 per cent. could have reconciled the people to the New Vaccination Office with its ruling spirit, its expenditure, and its inquisitors. Bad as smallpox may be, there is worse than smallpox; and much worse would have been Dr. Seaton with his pernicious quackery and his intrusive myrmidons. The recrudescence of similar projects from time to time attests the existence of visionaries who not only misunderstand the temper and traditions of their countrymen, but the constitution of human nature itself.

The year 1855 was one of war and excitement, but a

bill drawn on the lines of the Memorial was introduced to the House of Commons providing that from the 1st of January, 1856, the vaccination of the people should be committed to a medical superintendent with a medical staff, drawing their salaries from the Treasury, who would take over the existing local administration from the Poor Law authorities, and organise and develop it afresh. Further, it was provided—

That every adult person resident in England and Wales on 1st January, 1856, who had not already been successfully vaccinated, nor had Smallpox, be vaccinated by a duly qualified practitioner, or by a public vaccinator, within three months of that date, and submit to an inspection by the medical man, or public vaccinator, eight days after vaccination, under a penalty of £1.

That adults not born in England and Wales, and coming to reside therein, be vaccinated (if not already vaccinated) within three months of their arrival, under a penalty of £1.

That children be taken by their parents to be vaccinated within three months after 1st January, 1856, and be inspected eight days after vaccination, under a penalty of £1.

That children brought to England and Wales from other parts be vaccinated in like manner within three months of their arrival.

That children and adults be revaccinated until the operation is declared successful. If after repeated vaccinations, a patient prove insusceptible, a certificate to that effect shall protect him from the penalty otherwise rigidly inflicted.

That Public Vaccinators be entitled to a fee of 2s. 6d. for every child or adult successfully vaccinated within two miles of the Vaccinator's residence, and 3s. 6d. if beyond that limit. That Medical Practitioners, not public vaccinators, be entitled to 1s. for every person entered by them on the register as vaccinated.

That a certificate of successful vaccination be granted for the trifling fee of 6d.

That the Superintendent be empowered to institute rigid inquiry and to prosecute for penalties wherever he suspects the regulations of the Act have been neglected or violated.

Here, indeed, was a dose of despotism for Englishmen! Nothing being done in 1855, there was time for reconsideration. It was felt that the withdrawal of vaccination from local administration was too revolutionary; and another bill was introduced in 1856, under the direction of Mr. W. F. Cowper, President of the Board of Health (dropping the New Vaccination Office), with

provisions for the inspection and vaccination of children in public schools, and of emigrants; for revaccination in the event of epidemics; and for coroners' inquests on unvaccinated children dying of smallpox. There was no popular demand for such legislation. It was promoted by a group of medical place-hunters operating under the mask of the Epidemiological Society. The solitary petition in its favour was presented, 26th May, 1856, by Mr. James Furness Marson, a comrade of Dr. Seaton in the direction of the Society. Marson was resident surgeon of the Smallpox Hospital at Highgate, and as evidence of his unscrupulous advocacy, we may take the following assertions—

> Your Petitioner has, in the course of twenty years, vaccinated upwards of 40,000 persons, and has never seen any evil results traceable to Vaccination, with the exception of a single instance in which measles occurred at the same time, and four or five examples of rather severely sore arms arising from lymph recently taken from the cow. He has never seen other diseases communicated from the Vaccine Disease, nor does he believe in the popular reports that they are ever so communicated.
>
> The mortality from Smallpox in the Unvaccinated, of cases taken generally, is 35 per cent.; and among the Vaccinated attacked by Smallpox it is 7 per cent.
>
> Among children under fourteen years of age who have been vaccinated, Smallpox hardly ever proves fatal.
>
> As an example of what can be done by efficient Vaccination, your Petitioner begs to state that not one of the servants or nurses of the Smallpox Hospital has had Smallpox for the last twenty years. They have all been either vaccinated or revaccinated on coming to live at the Hospital.

The Petitioner omitted to mention how many of the said servants and nurses had entered the Hospital as patients, and were pleased to remain as officials. Prevarication throughout was the note of Marson's petition: he might argue that what he stated was true—true under conditions and reserves unstated.

It is often observed that the crafty never operate so successfully as when they have the earnest and ingenuous for instruments; and in Mr. Cowper, President of the Board of Health, the wire-pullers of the Epidemiological

Society had just such a tool. He believed what he was told, and delivered it with his own sincerity. In moving the second reading of the Bill on 31st March, he represented its object as "nothing more than the consolidation and amendment of preceding Acts;" and went on to say—

It is admitted by every medical man whose opinion is worth a moment's consideration, that Vaccination is a specific against Smallpox; of course I mean where the operation is properly performed. In fact, it is a point decided in the medical world that Vaccination, when properly performed, is a guarantee against Smallpox, except in extremely rare cases; and no evidence has been produced to justify the idea that it is attended with injurious consequences. Statistics show that in proportion as Vaccination is extended, the mortality from Smallpox is diminished.

And so on; the lesson being recited with all the docility of a good child. Mr. Henley struck a different note—

There is considerable dissatisfaction throughout the country with the mode in which Vaccination is performed. In my own neighbourhood, for example, the poor people complain that all sorts of eruptions appear on their children after the Vaccination they are compelled to undergo; and though they may be quite wrong, you cannot persuade them to the contrary. Then, too, I cannot approve of the transfer of Vaccination from the Guardians to a Central Medical Board. That change must be removed from the bill.

The second reading having passed unopposed on 31st March, and nothing more being heard of the bill, Mr. T. Duncombe, who knew the ropes of the parliamentary ship, grew suspicious, and on 7th July asked Mr. Cowper if he could fix a time when the bill would be brought on. Suspicion was amply justified by Mr. Cowper's answer. He said—

The bill is not one in which Members take any great interest. It is one of that class of bills which are usually taken at a late period of the evening; and I hope the Hon. Member will not object to its being taken at the same time as other bills of similar character.

To which Mr. Duncombe replied—

If Hon. Members do not care for the bill, they do great injustice

to the people, because it is a compulsory bill. Two hundred petitions have been presented against it, and only one in its favour. A more arrant job than this bill I never knew, and I hope an opportunity may be given me to oppose it.

Mr. Cowper's simplicity was apparent in his answer. He said—

I do not mean that the bill is of no importance, for it is intended to check the ravages of a disease which kills thousands every year. What I intended was, that the opposition which my Hon. Friend offers is not shared by other Members. My Hon. Friend says the bill will make Vaccination compulsory; but Vaccination is compulsory already. The purpose of the bill is to consolidate and improve existing legislation. It would be much fairer if my Hon. Friend brought in a bill to repeal compulsion. I will not bring in the bill after 12 o'clock at night.

The pledge not to bring on the bill after midnight settled its fate. Its promoters, aware that its provisions would not bear discussion, had reckoned on its unopposed passage at an hour when members were few, weary, and indifferent. Mr. Duncombe's vigilance defeated the scheme, which Mr. Cowper incontinently revealed. The bill was brought into Committee on 10th July, and the order for its reading discharged amid general satisfaction. Mr. Henley observed—

I am very glad this bill is withdrawn. The endeavour to make Vaccination compulsory has been most mischievous. Vaccination was quietly making its way. People were adopting it more and more; but from the moment it was made compulsory, they began to think every evil which happened to their children afterwards ensued from it. I have no objection to refer the question to a Select Committee as suggested, but whatever their report, nothing will satisfy me that it is advisable to make Vaccination compulsory.

Mr. Duncombe agreed that the course proposed was judicious—

The question is delicate and difficult, and investigation should precede legislation. In 1853, at a later period of the session than that at which we have arrived, the Compulsory Vaccination Act was smuggled through the House. Fortunately it became inoperative through its own defects, which it is now proposed to remove, and to make the law more stringent; but while I believe that great good has resulted from Vaccination, I do not think we should try to encourage it by penal enactment.

Mr. Cowper, in protesting against surrender, observed—

Some argue as if people should never be forced to do what they do not like; but the force of this objection is greatly weakened when we recollect that in compelling Vaccination we are not obliging parents to do anything disadvantageous to themselves, but merely to take precautions against a loathsome and terrible disease.

The most intolerable tyrannies vindicate themselves by the advantages they enforce on their perverse subjects. The claim made for vaccination, that it protects the vaccinated from smallpox, deprived the vaccinated of any right to complain of risk of injury from the unvaccinated. Moreover, that those who were persuaded that vaccination neither prevented nor mitigated smallpox should be required to undergo an operation, that was to them a cruel and dangerous imposture, was surely a wrong of the most excruciating character. It was well that neither the bill of 1855 or 1856 was allowed to pass; but if either had passed, it might have brought the question of compulsion to an earlier issue.

CHAPTER XXXIX.

JOHN GIBBS'S LETTER—1855.

As we have said, there was little living confidence in vaccination. Jenner's undertaking, "that the person inoculated with cowpox is rendered perfectly secure from the infection of smallpox," had been everywhere conspicuously belied. But latterly a new faith had come into existence as to the preventibility of disease and the possibility of its suppression; and, thus persuaded, the public were less disposed to be sceptical toward new or revived prophylactic impostures. Favoured by this disposition of the public mind, a clique of vaccinators, operating under cover of the Epidemiological Society,

were able to obtain concessions from Parliament which, prior to the sanitary evangel, were unattainable. It was only when too audacious, they proposed to set up a Vaccination Office, endowed from the Exchequer, with inquisitorial and punitive functions, that they suffered check.

To resist doctrine it is necessary to possess doctrine. People might distrust or dislike vaccination, but they were at a great disadvantage against aggressors until prepared to justify their distrust and dislike in definite and scientific form, setting evidence against assertion, and veracious against factitious statistics. Unfortunately the mischief of coercive legislation was consummated ere opposition was organised. The first to frame a comprehensive indictment against vaccination was John Gibbs, an Irish gentleman. It took the form of a letter addressed to Sir Benjamin Hall, dated from Maze Hill Cottage, St. Leonards-on-Sea, 30th June, 1855. On the motion of Joseph Brotherton, M.P. for Salford, the letter was ordered to be printed by the House of Commons, 31st March, 1856.*

Mr. Gibbs opened his letter with drawing attention to the fact that whilst the Compulsory Act of 1853 was the first direct attack upon personal liberty in medical matters, there was "no subject upon which so many otherwise well-informed persons betrayed such ignorance and credulity as upon vaccination." Indeed, upon nothing were the legislators who enacted compulsion so frank as in their confession of ignorance and submission to medical instruction. What was there to justify legislation on terms thus abject against their fellow-countrymen?—

> Why is Vaccination held in abhorrence by so many? Have those who reject it no weighty reasons to justify their rejection?

* COMPULSORY VACCINATION.—Copy of a Letter, dated 30th June, 1855, addressed to the President of the Board of Health by JOHN GIBBS, Esquire, entitled, *Compulsory Vaccination briefly considered in its Scientific, Religious, and Political Aspects.* Ordered by the House of Commons to be printed, 31st March, 1856.—Folio, pp. 31.

They do not believe that it affords an efficient and assured protection against the invasion of Smallpox; they have a natural disgust to the transfer of a loathsome virus from a diseased brute, through they know not how many unhealthy human mediums, to the veins of their children; they have a dread, a conviction, that other filthy diseases, tending to embitter and shorten life, are frequently transmitted through the vaccine virus; they cannot bring themselves to believe that the true way to health can be to corrupt the blood and lower the vital energies by the infusion of a poison and its consequent train of morbid influences; and further, they have a conscientious conviction that voluntarily to propagate disease is to set at naught the Divine Providence and violate the Divine Will.

Are such scruples and objections entitled to no respect? Should they be permitted to have no force? Are they capable of no justification? Should the sole answer to them be a Coercion Act? Such is not the best way to disarm hostility, and to ensure conviction. Who would put faith in the professions of a philanthropist who should threaten the objects of his beneficence with fine or imprisonment if they did not accept his proffered boon? Or who could receive with cordiality and respect the doctor of physic who should thunder at the door, armed with scab and lancet, threatening to assault the inmates if they did not accept his services? If Vaccination be indeed a blessing which must needs be showered upon the land, would it not be more becoming in a wise Government and a free people to trust to the dissemination of information rather than attempt to make unconverted converts by force?

Had smallpox been preventible by vaccination, such contention would have been useless. The virtue of the rite, manifest in its efficacy, would have secured its observance. The bitterness of compulsion lay in the attempt to enforce imposture, and to suppress the convictions of those whose perceptions were sharper, and whose loyalty to right was more determined than in the mass of the nation. Mr. Gibbs had no difficulty in adducing evidence in proof that vaccination did not prevent smallpox. The reports of the Registrar-General and the hospitals furnished testimony in such profusion, that his difficulty lay in the selection of examples likely to be most convincing. From the *Lancet*, of 21st May, 1853, he took the following confession—

In the public mind extensively, and to a more limited extent in the medical profession itself, doubts are known to exist as to the efficacy and eligibility of Vaccination. The failures of the operation have been numerous and discouraging.

Nor did the failure to prevent smallpox exhaust the condemnation of vaccination. Ineffective, it was far from harmless. Itself a disease, it was a conductor and excitant of other diseases, and, inoculcated, occasionally bore with it other company. Erysipelas, as Jenner taught, was the note of successful vaccination; but erysipelas, not being a limitable affection, was frequently a mortal one; and deaths from erysipelas as a sequence of vaccination were of constant occurrence. Then there were skin eruptions, carbuncular and glandular swellings, tuberculosis, scrofula, syphilis, etc., either provoked or inseminated with the vaccine disease. Such results were so distinctly recognised that, in the *Lancet*, of the 11th November, 1854, it was stated—

> So widely extended is the dread that along with the prophylaxy something else may be inoculated, that few medical practitioners would care to vaccinate their own children from a source of the purity of which they are not well assured.

But the care vaccinators exercised over their own offspring was impracticable for the multitude. Again, citing the *Lancet*, 23rd October, 1854, it was said—

> The poor are told that they must carry their children to be vaccinated by medical men who may be strangers to them. They apprehend—and the apprehension is not altogether unfounded, or unshared by the educated classes, that the vaccine matter employed may carry with it the seeds of other diseases not less loathsome than the one it is intended to prevent.

Useless against smallpox, and injurious in itself, it remained to test the influence of vaccination on the health of the community—

> What is the per centage of deaths from all epidemics among the Vaccinated as compared with the Unvaccinated? What is the per centage respectively of cases of disease of the respiratory organs, of skin diseases, of scrofula, and of convulsions? What is the average duration of life among the Vaccinated and among the Unvaccinated? Of a thousand children vaccinated within a given time after birth, and of a thousand unvaccinated, the whole two thousand being placed as nearly as possible in like circumstances, what per centage in each thousand attain the age of puberty?

These are statistics with which the advocates of Vaccination have never grappled. Is it not, then, rather premature to decide that Vaccination is an unmixed good, a boon which we ought not only gratefully to accept, but which we should even combine to force upon the acceptance of others?

If it should appear that before a given age the rate of mortality from all causes be the same among a thousand vaccinated and a thousand unvaccinated children, of what avail is Vaccination? Of what import is it, as a public question, in what shape death claims his allotted number of victims, whether by Smallpox, Scarlet Fever, or Hooping Cough? If, however, the rate of mortality should prove to be greater among the Vaccinated than among the Unvaccinated, how shall we avoid the conclusion that Vaccination is a curse and not a blessing?

The interdependence of the forms of zymotic disease, so luminously displayed by Dr. Watt in the statistics of Glasgow, was apparently a conception in excess of the capacity of the average medical mind. It was the custom of vaccinators to treat smallpox as a solitary existence, any diminution of which was ascribed to the observance of their rite, and any increase to its neglect, although the observance of the rite was neither less in the waxing, nor more in the waning of the disease. With many illustrations from medical literature, Mr. Gibbs enforced the lesson that diseases were not irregular and detached disasters, but varied manifestations of a common disorder: that when one form prevailed, other forms abated or disappeared; that health, and the defect of health, were referable to habits and conditions of life; and that the consequent rate of mortality was unaffected whether smallpox happened to be one of its factors—indeed, in numerous instances, a reduced rate of mortality signalised the prevalence of smallpox. In short, to suppose that the creation and culture of an ailment like vaccination could by any means tend to the invigoration of life was to reverse the canon—that health always and everywhere was the best defence of health.

Among the supporters of his thesis, none had greater weight than Dr. George Gregory. Adducing "the experience which twenty years of official connection with

the Smallpox and Vaccination Hospital had given him," he asserted—

The great principle that there are no diseases strictly isolated from others. They are links in a chain—

"All are but parts of one stupendous whole."

They must be viewed in conjunction, if we would hope to form just, enlarged, and legitimate views of the character and pathological affinities of each.

Long surmised, but never proved, until the statistical inquiries of recent times showed its correctness, Dr. Gregory continues—

We may, for want of a better name, call this curious doctrine the Law of Vicarious Mortality; by which is understood that whenever one epidemic diminishes, another increases, so that the sum total of epidemic mortality remains, on an average of years, nearly the same.

EPIDEMIC MORTALITY IN ENGLAND AND WALES DURING 1838, 1839, AND 1840.

	Year 1838.	Year 1839.	Year 1840.
Smallpox	16,268	9,131	10,434
Measles	6,514	10,937	9,326
Scarlet Fever	5,802	10,325	19,816
Total Mortality by the Exanthemata,	28,584	30,393	39,576
Hooping Cough	9,107	8,165	6,132
Total Epidemic Mortality	37,691	38,558	45,708
Total Mortality throughout England and Wales	342,529	338,979	359,561

We learn from this table, that every year is distinguished by some master epidemic. In 1838, Smallpox was the ruling epidemic throughout England. In 1839, Measles and Scarlet Fever struggled for the mastery. In 1840, Scarlet Fever was so general and so fatal, that the mortality by it exceeded by one-fifth the ravages of Smallpox during the epidemic season of 1838, and more than doubled the mortality by that disease in 1839. . . .

Everything teaches us that when one avenue to death is closed another opens—

"Noctes atque dies patet atri janua Ditis."

Vaccination, great as its merits are [What are they?—J. G.], and no one more fully appreciates them than I do, does not, and cannot do, all that its too sanguine admirers promised. The blessings of Vaccination are met and balanced by the Law of Vicarious Mortality. How and why is this? The explanation is easy. The weak plants of a nursery must be weeded out. If weakly children do not fall victims to Smallpox, they live to fall into the jaws of tyrants scarcely less inexorable. Scarlet Fever and Measles are both advancing in respect of mortality; and the increase of deaths by Hooping Cough since this century set in [that is, since the introduction of Vaccination.—J. G.] is quite extraordinary.*

The concession of so much was the concession of all. If smallpox was merely displaced to be replaced, and the tale of death maintained by cognate diseases, what was there to claim for vaccination, even if it were allowed to have an influence adverse to smallpox? Where were the lives saved? and where the glory of the immortal Jenner?

The advocates of compulsory vaccination were accustomed to cite countries like Austria, where the practice was enforced, for English imitation. Let us then compare, said Mr. Gibbs, the death-rate of the chief centres of English population with the death-rate of the chief divisions of Austria, and note which had the advantage in the years 1850-51—

	Death-rate per 1000.		Death-rate per 1000.
England and Wales	22·0	Lower Austria	35·7
London	23·3	Upper Austria	27·7
Liverpool	29·0	Styria	30·3
Manchester	29·0	Bohemia	38·6
Birmingham	23·3	Moravia	30·9
Leeds	24·6	Galicia	30·8
Dublin	26·8	Lombardy	33·9
Cork	23·3	Venetia	33·3

These figures required no commentary. If vaccination had stopped smallpox in Austria, it evidently had not

* *Eruptive Fevers*, pp. 5-8. London, 1843.

reduced mortality even to the level of the most insanitary English towns.

Assuming, said Mr. Gibbs, that vaccination is entitled to all the credit claimed for it, let us endeavour to estimate the gain, if it should be enforced. The yearly average of deaths from all causes, in England and Wales, is 370,000, of which about 7,000 are from smallpox—

This 7,000, then, is the limit of gain which enforced Vaccination could confer; but from the 7,000 should be deducted about one-third for deaths from Smallpox among the Vaccinated; and from the remainder should be deducted an equivalent for the deaths caused immediately and remotely by Vaccination; and another equivalent for the deaths resulting from the Law of Vicarious Mortality. This done, it would require no little ingenuity to discover a balance in favour of Vaccination.

Having thus argued the matter out, was not Mr. Gibbs justified in asking—

What would be thought of the tinker who would knock a hole in the bottom of his saucepan lest one should be burned there in the ordinary way?

Yet it is just what the vaccinator does; and when he finds—as he might have foreseen, had he been governed by common sense—that his saucepan does not wear a bit the better, but rather the worse, he gravely endeavours to excuse the failure, by asserting that unfortunately he made the hole too big, or too little, too much on this side, or too much on that, or by offering some other equally wise excuse.

Lastly, there were the political and moral considerations involved in compulsory vaccination—the first attempt in England to confer on a medical prescription the force of law—

Surely, a wise Government may perceive that there are greater evils than the occasional outbreak of an epidemic. The systematic violation of human rights and natural affections, the uprooting from the human breast of feelings of self-reliance, a state religion in physic, coercion which may well be regarded as odious persecution, the belief of the poor that what they hold dearest is sacrificed to the selfish prejudices of the rich—any one of these is far worse than a pestilence.

Cannot they who believe in Vaccination protect themselves? Nobody seeks to hinder them; nobody presumes to dispute their right to adopt any medical practice, however questionable it may

be. Why cannot they act with like forbearance to others? Surely, if freedom be more than a name, it implies the right of the freeman to reject not only that which other men may choose to regard as evil, but even that which they may combine to urge upon him as good. . . .

How absurd that an attempt should be made to visit with punishment the want of belief in a scientific, or rather unscientific, dogma! How absurd to pretend to the possession of a prophylactic of such unquestionable potency that its acceptance requires the threat of force! In their anxiety to coerce others, compulsory vaccinators demonstrate their own defect of faith in the prescription which they assert affords complete security from Smallpox.

As observed, the service of Mr. Gibbs is entitled to special commemoration, because it was the first attempt to put the arguments against vaccination into systematic shape. He demonstrated the quackery of the practice, and the fallacies wherewith it was defended; and denounced the tyranny of the legislation that would compel those who recognised the imposture to submit to it. The service thus rendered by Mr. Gibbs constituted a ground of vantage for further operations: those who had to contend against the delusion had their hands strengthened, and their power of assault magnified, by what he was favoured to accomplish.

JOHN GIBBS was born at Enniscorthy, County Wexford, on 25th May, 1811. Owing to the unsettled life of his father as Captain of the Royal Cork Volunteers, his education was desultory—at various schools, and under various masters. Sagacious, bright, earnest, and independent, he early manifested a passion for such things as made for human welfare, and improvement. Abstinence from alcohol, in connection with Father Mathew's mission, had in him an enthusiastic advocate. A book by Captain Claridge on the water cure excited his interest, and led to the formation of the Enniscorthy Hydropathic Society. Anxious to master the mysteries of this new treatment of disease, he set out for Silesia in 1843, and placed himself under the instruction of Priessnitz, remaining with him as a chosen disciple until 1847, when he left with a certificate of competency.

Yours very truly,
John Gibbs.

Whilst acquiring his art with Priessnitz, he communicated his experiences to his Enniscorthy friends, who published them in the Wexford newspapers, a selection from which was reproduced as *Letters from Græfenberg*, in 1847. A passage in one of these letters, dated 27th November, 1844, indicates the manner in which his attention was drawn to smallpox—

> Another case of Smallpox has just been treated by Priessnitz. The patient is the daughter of a peasant in the neighbourhood, and is about twenty years old. She was confined for eight days, and was most profusely covered with the eruption. An Italian physician said that he never saw the symptoms come out better. She had at first the usual treatment—wet sheets, wet rubbings, and tepid baths; and, after the eruption appeared, three wet sheets and three tepid baths daily. She will not have the slightest mark. Under the water cure Smallpox appears to be deprived of half its terrors; as far as my observation extends, it neither robs man of life, nor women of beauty.

On his return, he assisted Dr. Lovell in opening a hydropathic establishment at Barking, Essex; and, in 1848, he undertook the medical superintendence of the Grande Chartreuse in Piedmont. There he met Miss Anna Skelton, to whom he was married, at Nice, in 1849. Ultimately he made his home at St. Leonards, Sussex. The passage of the Compulsory Vaccination Act, in 1853, led him to publish a pamphlet, *Our Medical Liberties*, 1854, which excited the attention and won the approval of many thoughtful people. At the suggestion of Mr. Thomas Baker, he constructed a letter from the substance of the pamphlet, and addressed it to the President of the Board of Health, which, as we have seen, was issued as a parliamentary paper. The more vehement controversy which sprang up in recent years when the Vaccination Act was tightened, found Mr. Gibbs in health too feeble for active exertion. After his wife's death, he retired to Jersey to be near his sister, Mrs. General Lane, in whose house he died in the winter of 1875.

CHAPTER XL.

SIMON'S DEFENCE AND HAMERNIK'S JUDGMENT.

An attack on Vaccination like that delivered by John Gibbs had to be met, and Mr. John Simon, Medical Officer to the Board of Health, was selected for the purpose. The answer appeared in 1857 in a quarto blue-book entitled *Papers relating to the History and Practice of Vaccination,** 83 pages consisting of a defence of Vaccination, and 188 pages of illustrative and corroborative documents. Oddly enough the treatise of Mr. Gibb is never once mentioned, whilst the order of defence is obviously marshalled in front of his positions. The reason for this reserve was double: first, it was considered unadvisable to magnify or advertise so dangerous an antagonist; and second, it is considered unprofessional to discuss a medical question with one who is not in medical orders.

In reviewing Mr. Simon's defence we are constantly reminded of Mill's observation, that a doctrine is never truly judged until it is judged in its best form; and of Coleridge's caution, that an adversary's bad arguments are no evidence of the goodness of our own. It lay in the nature of things that many absurd and trumpery objections should be advanced against vaccination, but to cite and sneer at them was neither to appreciate nor to refute the objections that were valid. Had Simon been less scornful and less loftily disposed, condescending to deal with his antagonist verbatim, he might have proved no more successful, but he would have had at least the praise of judicial intention.

After the custom of the eulogists of vaccination, Mr. Simon opened with a chapter on "Smallpox before the

* *Papers relating to the History and Practice of Vaccination.* Addressed to the President of the General Board of Health, and presented to both Houses of Parliament by command of Her Majesty. London, 1857. Pp. lxxxiii. and 188.

Discovery of Vaccination," consisting of terrible tales of the ravages of the disease among Mexicans, Indians, Greenlanders, Icelanders, Siberians, Hottentots, etc., as if disbelievers in vaccination were under any obligation to dispute them. It is not denied that smallpox may be a deadly epidemic: the contention is that vaccination would not abate its deadliness. At the same time, when terrible tales are told of the devastations of smallpox, it is but fair to press for proofs of their authenticity. Travellers and historians occasionally prefer the excitement of wonder to adherence to matter-of-fact. When, for instance, Mr. Simon gravely relates that "in Mexico $3\frac{1}{2}$ millions were suddenly smitten down, leaving none to bury them," it is permissible to inquire who was responsible for the Mexican census in the days of Cortez, and who counted the unburied dead? Further, it is idle to attach importance to isolated statements about smallpox, as if smallpox were an independent destroyer of mankind. It is a member of a group of destroyers, and its activity is usually coincident with a correspondent dormancy among its associates. Until the complete vital statistics of a community are in evidence, it is vain to assert whom smallpox present has slain, or absent has saved. It is the prevalence of death, and not the mode of death, that is the critical question.

Again, when the familiar list of great folk who died of smallpox in Europe in the 17th and 18th centuries is run over, the remark occurs, that considering the habits and habitations of the said great folk, their fate was in nowise surprising. Those who believe that smallpox is generated in unwholesome conditions of life are not to be confounded by facts that illustrate their contention. And the like is to be said of the equally familiar tale of London smallpox. It was to be expected that citizens housed and fed as Londoners were housed and fed should have been plagued with smallpox and its congeners. What is denied is that vaccination could have saved them from smallpox, or reduced their death-rate, their conditions of life remaining the same.

The extravagant exhibition of the horrors of smallpox is the customary preliminary to the presentation of Jenner as the saviour from them; and the part of showman in this respect was fulfilled with more than ordinary abandon by Simon, who thus depicted the situation and the rescue—

> Medicine baffled and helpless! For millions of our race in after times the continued raging of that pitiless plague! A drearier picture could scarcely have saddened mankind.
>
> That this despair was not lasting is due to the genius of an English surgeon; and the close of the 18th Century, which had much to darken it, will be remembered till the end of human history for the greatest physical good ever yet given by science to the world.

Then followed the Jennerian legend, related in highly fabulous form with sundry extensions from Simon's private fancy. It is sufficient to reassert that Jenner did not introduce cowpox. On the contrary, he rejected cowpox for horsegrease cowpox; and such was his prescription because he knew from the evidence of his neighbourhood that cowpox afforded no protection from smallpox. It is true that when Pearson discredited horsegrease cowpox, and recommended cowpox, Jenner dropped his prescription, and put himself forward as the discoverer of cowpox; but it is also true that in subsequent years he resumed his original position, and indeed dispensed with the cow altogether, and, like Sacco of Milan and De Carro of Vienna, used and diffused horsegrease or horsepox neat, describing the equine virus as "the true and genuine life-preserving fluid." Of all this, however, Simon was either ignorant, or preferred to say nothing. He, too, dropped cowpox as a disease of the cow. Referring to a conjecture by Jenner that cowpox was "smallpox in a milder form," he maintained that the conjecture had been verified by Gassner in 1801; by Thiele in 1836; by Ceely in 1839; and commercially by Badcock of Brighton in 1840. Again and again Badcock derived fresh stocks of vaccine virus from cows artificially infected with smallpox; having vaccinated with

such vi us more than 14,000 persons, and having furnished supplies of it to more than 400 medical practitioners—

It has been made matter of almost familiar experiment that the infection of Smallpox may, by inoculation, be communicated from Man to Cow; that its result is an eruption of vesicles presenting the physical characters of Cowpox; that the lymph from these vesicles, if implanted in the skin of the human subject, produces the ordinary local phenomena of Vaccination; that the person so vaccinated diffuses no atmospheric infection; that the lymph generated by him may be transferred, with reproductive powers, to other unprotected persons; and that, on the conclusion of this artificial disorder, *neither renewed Vaccination, nor inoculation with Smallpox, nor the closest contact and cohabitation with smallpox patients, will occasion him to betray any remnant of susceptibility to infection.* (P. xiv.)

Thus were the discredited claims of Jenner revived and reasserted for a new variety of virus—for smallpox inoculated on the cow! Even revaccination was pronounced impossible, and logically; for revaccination implies susceptibility to infection. It was idle, however, to shelter this new development under Jenner's authority. When Jenner said that cowpox was smallpox in milder form, he meant in process the reverse of Simon's interpretation. He meant that smallpox came to man from the horse through the cow; and not that the cow contracted smallpox from man. Showing his nephew a horse with greasy heels, he said, "There is the source of smallpox."* When the stock of cowpox for vaccination ran low, Jenner feared it might be difficult to enlarge the supply. Why? Because farmers exercised such precaution, since they learnt that cowpox was derived from horsegrease, that the disease among cows had become well nigh extinct. Possibly Jenner was mistaken: possibly cowpox originated in smallpox: but what Simon described as "settled" in 1857 exists to this day in vehement dispute. Simon's prescription was practically a fresh discovery—a new departure in vaccination. It

* Baron's *Life of Jenner*, vol. i., p. 135.

recalls the practice of the variolators who took virus for timid patients from healthy subjects inoculated with mild smallpox; the supposition being that the virulence of the mild pox was meliorated in them, they playing the part that Ceely and Badcock assigned to the cow. Thus when Dimsdale variolated the Empress Catharine, it was with smallpox mitigated in the person of a strong young man. Had Dimsdale substituted a cow for a man, he would not only have anticipated Jenner, but the later revelation and practice of Ceely and Badcock—"the greatest physical good ever given by science to the world."

Simon next went on to describe "Smallpox since the Use of Vaccination," concerning which these observations may suffice—

1st—Smallpox was abating over Europe prior to the introduction of vaccination, notwithstanding the stimulation of the disease by variolation.

2nd—The discredit cast upon variolation by vaccination threw smallpox out of culture, and to that extent abated smallpox.

3rd—It was absurd to ascribe the decline of smallpox to vaccination in countries where only a part of the people were vaccinated; and usually, as in England, a part least liable to smallpox.

These considerations, sufficiently developed in preceding chapters, nullify the conclusion, supported by elaborate statistical tables, that vaccination was the cause of the decline in smallpox. The asserted cause was incommensurate with the effect.

Another remark remains, namely, that all vaccination was taken by Simon for effective vaccination, except where smallpox followed, and then suspicion was thrown on the virus or the time and mode of its administration. But under his own definition of virus, namely, smallpox inoculated on the cow, the greater part, if not the whole, of the vaccinations accomplished were with virus altogether diverse—with cowpox that owed nothing to smallpox, with equine cowpox, with horsepox, and much

else known only to omniscience. Yet it was to these heterogeneous inoculations, modified inscrutably in transit from patient to patient, that the subsidence of smallpox was attributed! In a word, whatever was anywhere or by anybody *called* vaccination, served, according to Simon, to exterminate smallpox. Where shall we find an epithet for such crass assurance, with neither science or common-sense to lend it the gloss of probability!

The succeeding chapter, "Alleged Drawbacks from the Advantages of Vaccination, and alleged Dangers of its Practice," was as abusive as unfair. It is admitted that much nonsense has been written against vaccination, and, if the pot may call the kettle black, much more nonsense has been circulated in its favour. Vaccination was recommended for the improvement of health and the complexion, for the cure of skin diseases, for the Plague, for whooping-cough, for rot in sheep, and for distemper in dogs—Jenner himself vaccinating the King's stag-hounds. But to what purpose such recrimination? The prime charge against vaccination is, that it is a disease which neither averts or mitigates smallpox; and the second is, that it frequently excites and sometimes conveys other diseases.

Simon waxed eloquent on the absurdity of referring the origin of certain scrofulous affections to vaccination, whilst describing such affections as notorious sequences of smallpox; but where was the absurdity if vaccination was (as he held) a mild form of smallpox?—the mild disease serving equally as a ferment or excitant of evil humours. In his furious contempt he forgot his science and logic, and implicitly conceded all for which rational adversaries of vaccination contended.

In the same reckless vein he asked, "Is properly performed vaccination an absolutely inoffensive proceeding?" and answered—

> Not at all, nor does it pretend to be so. The very meaning of the thing is, that it shall artificially and designedly produce a transient and trifling indisposition; that for some days the infant shall be uncomfortable with a sore arm and a slight irritation of

the adjacent axillary glands, and a perceptible amount of general feverishness. (P. lx.)

Here we agree, and here disagree—agree as to the disease, disagree as to the determination of its limits. First, the virus is in quality indefinite; and second, the recipient of the virus is a complex of qualities indefinite; so that, as Dr. Mead observed, when smallpox was used for inoculation, "it is more material into what kind of body it be infused, than out of what it is taken." As pathologists freely allow, it is impossible to predicate the transformations of organic poisons in the animal frame. A vigorous infant may throw off the virus, designated vaccine, and suffer no apparent harm, but the same virus may operate very differently in contact with debility and disease; so that, in the words of James, we have to say, "Behold how great a matter a little fire kindleth!" The conditions of vaccination are essentially those of hazard; the issues are those of a game of chance; the result at the best being a risk for naught.

Simon, too, was positive as to the impossibility of the invaccination of syphilis—a fact no longer in question, save as to the degree of frequency. And here, also, in his recklessness he forgot consistency, saying—

When a child is born with the heritage of syphilis (a very frequent incident, if its parents have been suffering from that infection) the characteristic symptoms do not appear till some weeks after birth; and then the scandal discloses itself. (P. lxvi.)

Just so; and before disclosure the child is vaccinated, and serving as vaccinifer, the latent syphilis is inoculated and diffused.

Vaccination, according to Simon, was easy—"The mere manual trick is learnt from a minute's teaching and an hour's practice." Difficulty begins in the selection of proper subjects for the rite, for which none are qualified, save the healthy; and for the recognition of health a trained eye is wanted—

If sickly children are vaccinated, children breeding other disorders, children having skin disease, children teething and the like, the results must be at least unsatisfactory, and possibly dangerous. (P. lxii.)

If such children are exempted from vaccination, how can vaccination ever approach universality? And when universal vaccination is effected, as it is frequently effected, how can it fail to be attended with "results, at least unsatisfactory, and possibly dangerous"?

More difficult than the selection of subjects is the selection of virus for the rite; and the manifold dangers and the requisite precautions were thus specified—

> Especially as regards the quality of vaccine lymph, the careless or uneducated vaccinator is using a dangerous weapon. It is only during part of the course of a vaccine vesicle that its lymph is suitable for further vaccinations: for after a given moment, at which the contents of the vesicle possess their maximum of simple contagiousness, they tend more and more toward the quality of common inflammatory products; and matter now taken from the vesicle is no longer the simple agent of a specific infection, but has less efficiency for its real purpose, and is specially able to produce other undesired results.
>
> A danger of somewhat similar kind is that of taking lymph from vesicles which already have been accidentally ruptured, or where from any other cause, local or constitutional, their specific fluid is likely to have been modified by common irritative processes.
>
> The danger of taking matter from irritated vesicles, and from vesicles at too advanced a period of their course, is one which circumstances render frequent; and there is reason to believe that, in at least a very large proportion of those cases where abnormal effects have resulted from so-called vaccination, it has been the employment of this ambiguous irritative matter which has occasioned the mischief and scandal.
>
> Still more critical changes occur in lymph when removed from the body, unless appropriate means be taken to preserve it; for, under the influence of air and moisture, it tends, like other dead organic matter, to putrid decomposition; and inoculation with it, when thus changing, can hardly be more useful or less dangerous than a casual scratch inflicted in the dissecting room. (P. lxii.)

No one who considers this limitation of vaccination to the healthy, and these prescriptions as to the collection and exhibition of "lymph," can fail to see that the charges of injury and death brought against the common practice were allowed and accounted for—were, indeed, the unavoidable associates of that practice. Vaccination, as described by Simon, was an ideal operation—impracticable on any ordinary terms. His contention and his

approbation were reserved for "properly-performed vaccination" on a healthy child, with innocuous virus, the proof of each condition being discovered in the result. If unsatisfactory or injurious, or deadly, then the vaccination could not have been "properly performed"—either the child was unhealthy, or the virus was at fault.

Nor can we wonder that the people, having experience of the uselessness and misery of the virulent practice should, undismayed by the terror of smallpox, decline its observance; nor that those who made gain thereby should, distrusting their power to prevail by reason, invoke legislation to enforce the imposture, calling in the policeman to support the doctor, as of old the soldier supported the priest.

Still further to sustain his case, Simon addressed the following Circular of Questions to upwards of 500 medical men—

I.—*Have you any doubt that successful Vaccination confers on persons subject to its influence a very large exemption from attacks of Smallpox, and almost absolute security against death by that disease?*

II.—*Have you any reason to believe or suspect that vaccinated persons, in being rendered less susceptible of Smallpox, become more susceptible of any other infective disease, or of phthisis; or that their health is in any other way disadvantageously affected?*

III.—*Have you any reason to believe or suspect that lymph, from a true Jennerian vesicle, has ever been a vehicle of syphilitic, scrofulous, or other constitutional infection to the vaccinated person; or that unintentional inoculation with some other disease, instead of the proposed Vaccination, has occurred in the hands of a duly educated medical practitioner?*

IV.—*Do you (assuming due provisions to exist for a skilful performance of the operation) recommend that, except for special reasons in individual cases, Vaccination should be universally performed at early periods of life?*

Whilst these questions were framed to draw the answers required, yet, however modified, the tenor of the returns would have been much the same. We might confidently predict uniform replies, if a circular were addressed to 500 clergymen soliciting their judgment as to the disendowment of the Church, to 500 Nonconfor-

mist divines as to the benefit of hearing sermons, to 500 military men as to the expediency of an imminent war, to 500 naval officers as to an enlargement of the navy, or to 500 publicans as to the justice of local option. Nor is there sense in attributing value to testimony to be had on demand by the yard. It is brought forth as of course, and to expect otherwise is to expect what is contrary to nature.

It will be said, "Do you really mean that medical men defend vaccination because it pays?" In no other sense, I reply, than as clergymen or publicans defend their vested interests. Medical men among themselves make no secret of their pecuniary interest in vaccination, as any one may see who reads their journals; and Simon's advocacy culminated in a demand for more liberal pay, as the only guarantee for "properly-performed vaccination."

We may view the matter in another light. Suppose a circular had been addressed to 500 medical men fifty years ago, as to the utility of bleeding, or blistering, or salivation, would not the tenor of the answers have been equally uniform with Simon's in favour of vaccination? Where are these practices now? But suppose any one of them had obtained legislative sanction and endowment, can we doubt that it would have survived to this day, certified as salutary and harmless by the gross of the medical profession? Let us clear our minds of cant. The assumption that men's convictions (I except the moral aristocracy) are not controlled by their selfish interests (often enough the reverse of their true ones) is cant.

Among those interrogated was Dr. Joseph Hamernik of Prague, whose developed answers form a paper which, by resaon of the independence, acumen and philosophy displayed, constitutes the distinction of Simon's collection of documents.

First, Hamernik inquired whether cowpox and smallpox had any relation to each other, deciding that they were diverse and independent diseases. Vaccinated

persons may be attacked with smallpox during the development of the cowpox vesicle, or a few days after the drying-up of the same. When inoculation is made with a mixture of cowpox and smallpox, there ensue a vaccine vesicle on the site of the puncture and a variolous eruption over the body. In fact, it is not uncommon to find cowpox and smallpox flourishing simultaneously on the same individual. Under some conditions, the one disease appears to stifle the other. Thus a powerful epidemic of smallpox will prevent the development of cowpox, illustrating the Hippocratic aphorism, *Duobus doloribus simul obortis—vehementior obscurat alterum*, exactly as happens when other diseases simultaneously invade the human organism. Again, in well-marked epidemics, cowpox does not protect from smallpox, even after repeated vaccinations. Under stress of such experience, the confidence in such vaccination was much shaken in England during the epidemics of 1825 and 1838. Vaccination was likewise found useless in the epidemics of Paris in 1825 and Marseilles in 1828. "Nor can revaccination achieve what vaccination cannot," said Dr. Brown of Musselburgh. The revaccinated die of smallpox like other people, as is proved by the official returns of the armies of Wurtemburg and Prussia—

Revaccinations among civilians in Bohemia are extremely rare, and hence I am unable to cite many cases. I only saw two persons who had been revaccinated die at the Prague Hospital—a Russian officer in the guards, and a physician from Bremen.

There is no validity in the statement that epidemics of Smallpox are arrested and made milder by rapid Vaccination and Revaccination; unless medical men could test the accuracy of their verdict, as lawyers do, by a new trial. Until they can do so, we must admit that there are cases and epidemics of Smallpox light and severe. It was so before Vaccination was heard of, and is likely so to continue longer than Vaccination will endure.

Second, turning to the examination of the characters of smallpox before and after vaccination, he observed—

If Vaccination really possessed the properties ascribed to it, a change must long ere this have taken place in the character of Smallpox, both of the sporadic and epidemic kind. Smallpox has

been minutely described by pathologists before Vaccination was introduced, and in such a manner that one would think they had seen the disease in the wards of our hospitals. Indeed the best pathologists of our time, who have paid special attention to Smallpox, agree that they could add nothing to the descriptions of Rhazes (who died at Bagdad A.D. 930), of Sydenham, 1675, of Richard Mead, 1754, and of John Huxham, 1764. Mead admits a light and severe Smallpox, and Huxham observed such slight epidemics that no fever appeared in the whole course of the disease. At present, pathologists would hardly class such cases with *Variola Vera;* they would, perhaps, call them *Variola Modificata;* or let them figure in their tables as *Varioloid* and proofs of the good results of Vaccination.

It may be that in former centuries Smallpox assumed more frequently the malignant or hæmorrhagic type; but this circumstance can in nowise be explained by the intervention of Vaccination. Even as many individuals of the animal and vegetable kingdoms have disappeared, so also have great changes taken place in the number and severity of diseases. When scurvy, putrid fevers, dysentery, etc., were commoner, Smallpox was likely to be more malignant: so much was due to the prevalent poverty and scarcity throughout Europe. Pauperism, want and hunger, are always characterised by a proportionate frequency, gravity and diffusion of various diseases.

Then, too, much of the mortality of smallpox in former times was attributable to maltreatment; and Hamernik illustrated what was possible under good treatment, by adducing his own experience when the smallpox wards in Prague were under his care. "The recoveries were very speedy, and the deaths less than five per cent."

Third, he held that the doctrine of Jenner was opposed to recognised pathological principles. Observation has taught us that two severe diseases cannot affect an individual at the same time. Thus typhus cannot go on with scarlet fever or smallpox, nor tuberculous with cancerous disease. The rule, however, only holds good with diseases that affect the whole organism. It does not apply to trifling or local affections, to which latter category cowpox belongs. The best marked diseases pursue their course contemporaneously with cowpox; and the scars of the punctures through which it has been inoculated have no more influence in averting smallpox than any similar scars resulting from analogous cutaneous lesion—

I consider it as a general pathological law that morbid actions which have entirely run their course can have absolutely no influence whatever upon the subsequent pathological reactions of the individual. Hence it is possible to suffer repeatedly from smallpox, scarlet fever, typhus, pneumonia, tubercular disease, etc. Nay, Smallpox has been observed five different times upon the same patient. Keeping these incontestable facts in view, it becomes a matter of indifference what was Jenner's doctrine relative to Cowpox, whether identical with Smallpox, or whether antagonistic to Smallpox or anything else. Nor can Variolation be advocated, if we pay attention to the same pathological law. A variolous attack, when once passed away, has no more influence, as regards future events, than any other disease. The reason why many escape Smallpox altogether, why some have it twice, why the inoculation of the disease has sometimes no effect, or why some can inhale its effluvia with impunity, is entirely concealed from us. As Cowpox is a disease foreign to man, it is particularly for graziers that further investigations can be interesting.

In answer to the Second Question, whether vaccinated persons, being less susceptible to smallpox, become more susceptible of any other infective disease, or of phthisis, Hamernik answered that the interrogation implied what, for reasons given, he disputed, namely, that the vaccinated were less liable to smallpox—

The assumption is perfectly gratuitous. Epidemics of Smallpox occur at widely varying periods, with different degrees of intensity, prevalence, and duration. The Vaccinated and the Unvaccinated suffer in every epidemic; and the influence of Vaccination cannot be determined from the character and progress of the disease in individual cases.

I am aware that the beneficial influence of Vaccination is inferred from the registers of public vaccinators; but I freely confess I consider these books as perfectly valueless; and I may add that the most intelligent of the gentlemen who keep them fully concur in my opinion. In this country we know full well how vaccinators are situated; and that little confidence can be placed in them is generally acknowledged.

To the Third Question, whether syphilitic, scrofulous, and other constitutional affections are communicable in vaccination, Hamernik answered with regret in the affirmative. It was true that the contrary opinion was written at large. Taupin testified that he had taken virus from children suffering from typhus, scarlet fever, measles, smallpox, itch, inflammation of the brain, the lungs and

the intestines; from chorea, epilepsy, scrofula, tuberculosis, and ring-worm, and no harm had resulted to the vaccinated; and Launauzy agrees with Taupin, that it is mere prejudice and groundless to suppose that cowpox taken from unhealthy children can inflict any hurt—

On this head, it will be sufficient for me to remark that to arrive at a knowledge of the amount of mischief such doctrine has brought upon mankind, it would be necessary to learn how much the promulgators gained by their unlimited favour for Vaccination.

Professor Waller, of Prague, has proved that syphilis may be inoculated by means of a patient's blood; and as blood is often drawn with the virus of vaccination, no doubt can exist as to the possibility of doing in this manner a vast amount of mischief. Monteggio taught at Milan in 1814, that when a syphilitic child is vaccinated, the result is a vesicle containing both kinds of virus; and Carioli expressed the same opinion in 1821. Marcolini relates that, on 16th June, 1814, ten children were vaccinated from a syphilitic infant, who died at the end of a few months, and five of the ten children syphilised from her.

In answer to the Fourth Question, whether vaccination should be universally performed at early periods of life? Hamernik replied, that he obviously could not recommend a practice which put health, and even life itself, in jeopardy for no certain advantage. Any efficient examination of virus was impracticable. Vaccinators may set to work with zeal and care, but their energy soon cools, and they settle into perfunctory routine. Government should assume a passive attitude toward vaccination; or if people *will* be vaccinated, something might be done to minimise the danger. If the practice is assigned to salaried functionaries, they are sure to create evidence to justify and perpetuate their official existence. Left to common option—

Vaccinations would every year become fewer, until at last we should read with astonishment in old newspapers how much attention was once paid to the practice.

Whilst the majority of Simon's correspondents conjured up arguments for vaccination, their facts, apart from their rhetoric, conveyed much that was instructive. For instance, a register was produced of the deaths in Christ's Hospital, London, for the century, 1751-1850. The boys in that charity boarding-school numbered about 550; and in twenty-five years, 1751-75, there died of smallpox 22, and in twenty-five years, 1776-1800, there died 9. In the fifty succeeding years, 1801-50, there died 1, and he in 1820. Thereon we are asked to recognise the efficacy of vaccination! But what reduced the mortality from 22 in 1751-75 to 9 in 1776-1800? And if 550 boys in the centre of London, in the flux of constant coming and going, escaped with so few fatalities from smallpox, what comes of the asserted omnipresence and havoc of the disease in London before the introduction of vaccination? Across the street from Christ's Hospital stands Newgate, which, during the same years, was haunted with jail fever; which fever was gradually suppressed, and by what charm? Certainly by no rite analogous to vaccination. Why, then, should we be required to admit an agency in the reduction of smallpox which played no part in the reduction of a cognate disease? In times when smallpox was frequent in Christ's Hospital, about as little regard was paid to stench and ventilation as in the prison over the way. In later years a more wholesome atmosphere prevailed, and concurrently the diet of the scholars was altered and improved —changes in themselves as sufficient to account for the disappearance of smallpox from the school as for typhus from the jail.

The like indifference to variations of circumstance vitiated throughout the generalisations of Simon and his correspondents. Assuming that the conditions of life and the characters of disease remained unaltered, smallpox was treated as uninfluenced by aught but vaccination. It needs no words to condemn such procedure as radically unsound; and men, otherwise sane, only persist in it as they persist in similar hallucinations. Even the

matter of vaccination they left undefined, or differently defined. Whatever was called vaccination was taken for vaccination, and the reduction of smallpox ascribed to it. In Jenner's hands it was first horsegrease cowpox, then cowpox, and lastly horsepox. According to Simon true vaccination was effected with smallpox inoculated on the cow. Which, we demand, was the virus that wrought the numerous miracles we are summoned to believe? Is it indeed true that there is nothing certain about vaccination save the vaccinator's fee? Is it that, as in other thaumaturgical performances, virtue resides in the performer, described by Simon as "the duly educated medical practitioner?" Is it argued that vaccination is a species of incantation, and that it matters little what is the vehicle of the rite, its efficacy being dependent on the credentials of the administrator? Or that what is believed to be good against smallpox *is* good against smallpox, the charm consisting in the faith wherewith it is received?

The belief in vaccination and its proofs is much akin to the belief in witchcraft and its proofs. To argue about witchcraft, and to answer its proofs, was to become a sort of partner in the delusion. Deliverance lay in the unqualified denial of the imposture; and from that firm ground difficulty was solved and the inexplicable disappeared. As soon as the position of absolute disbelief is taken up, the plausibilities in favour of vaccination resolve themselves into the element of phantasy, so powerful and yet so evanescent. The arts of its advocates then become manifest with all the dodges, conscious and unconscious, whereby the light of truth is shut out, and the gloom requisite for visions provided. The story of vaccination is the story of many other impostures which have bewildered and afflicted mankind, and the study of one is the revelation of others.

CHAPTER XLI.

COMPULSION INTENSIFIED—1861 AND 1867.

THE Vaccination Act of 1853 imposed a forfeit not exceeding 20s. on any parent or guardian who failed to have a child vaccinated within three months of birth; but experience revealed a grave defect in the law. There was no provision for the prosecution of defaulters; and those who had no faith in vaccination, or accounted it a nuisance, enjoyed immunity without serious annoyance. To meet this defect a bill was introduced to Parliament in 1861, providing that "the guardians or overseers of any parish may appoint some person to institute and conduct proceedings for enforcing obedience." The bill was passed through the House of Commons under the care of Mr. Robert Lowe, meeting with little resistance, and with less in the Lords. In vindicating the measure, 10th July, 1861, Mr. Lowe observed—

> Parliament in 1853 passed an Act for Compulsory Vaccination, but owing to a defect in the provision of expenses for prosecution, it has fallen into desuetude. When the present Government was formed in 1859, a clause was introduced to the Public Health Act correcting the defect; but under pressure of the Member for Finsbury [Mr. Thomas Duncombe] I surrendered it. It has been to me a bitter reflection that I did so; for I am convinced that the sacrifice of that clause has occasioned the loss of thousands of lives in this country.

The question is sometimes asked, Why is it that association with horses is so prejudicial to morality? This interrogation might be accompanied with another, namely, Why is it that the advocacy of vaccination is so frequently associated with romance and rant? That public vaccination had fallen into desuetude was untrue. There were fluctuations from year to year, but the rate was maintained without practical abatement. That in 1861 it could be said that thousands of lives had been lost because prosecuting officers were not provided in 1859,

was romance and rant without mitigation. In England and Wales there died of smallpox—

In 1858	6460	In 1862	1628
1859	3848	1863	5964
1860	2749	1864	7684
1861	1320	1865	6411

Where then were the thousands of lives lost from the formation of the Government in 1859 to 1861? and where were the lives saved after the enactment of the vital clause? But who that knew Mr. Robert Lowe could believe that he was convinced that the surrender of the clause occasioned the loss of thousands of lives, and that the loss was to him a bitter reflection? Would not the vulgar version of the invocation, *O mihi beate Martine!* have been appropriate to the situation?

Further, continued Mr. Lowe—

From 1837 to 1840 the deaths from Smallpox amounted to 12,000 a-year. From 1840 to 1853, during which period Vaccination was provided by the Poor Law Boards, the annual average of deaths was only 5,200. Thus by the diffusion of Vaccination, the mortality of Smallpox was reduced by more than one-half. Then in 1853 the Compulsory Law came into operation, and its first effect was remarkable. The number of vaccinations enormously increased and the deaths diminished. In 1854 they sank to 2,808, and in 1855 to 2,525. Afterwards they gradually increased up to the present time [When in fact they never were lower!], the Act having, as I already explained, fallen into desuetude. Thus is the efficiency of Vaccination established!

Into such stuff may a clever man descend! The statement was rotten with untruth. It was gross misrepresentation to set forth the average mortality of 12,000 for the years 1837-40 as permanent mortality which the Act of 1840 reduced to 5,200. The years 1837-40 embraced a severe epidemic, following years of quiescence during which vaccinators had been singing pæans over their imaginary victory. Holding as we do that smallpox comes and goes with indifference to vaccination (unless in so far as it keeps the disease alive) the figures cited by Mr. Lowe as completely illustrate our contention as they nullified his. By no contrivance can the fluctuations of smallpox be associated with more or less vaccination.

Probably Mr. Lowe was inspired by his medical staff, but, if so, he made the inspiration his own, evolving as from personal certainty, such fancy-work as this—

Out of 1000 who take Smallpox without being vaccinated 350 die; while out of 1000 badly vaccinated only 150 die; but out of 1000 well vaccinated only 5 die.

To which the conclusive answer would have been, that a mortality of 7 in 20 of the unvaccinated was about double that of smallpox in the time when all were unvaccinated; and that disregarding the factitious classification, the mortality over all cases continued as it was in the pre-vaccination era. What smallpox was, smallpox has remained—discrete, confluent, malignant; each type being qualified as slight, dangerous, and deadly; the relation of vaccination to the type being wholly irrelevant.

Further, he proclaimed without reserve, that smallpox was transmuted to cowpox in the cow—

There was a theory started that the efficacy of Vaccination was wearing out; but the valuable discovery of Mr. Ceely has set any apprehension on that score at rest for ever. Mr. Ceely has proved that Smallpox, when taken from the human body and introduced to that of the cow, produces Cowpox. It is thus evident that we have the means of obtaining Cowpox of the requisite strength to any extent. The beautiful discovery has also been made that the security of Vaccination may be almost indefinitely increased by multiplying the number of punctures.

Thus was mystery dispelled! Cowpox was smallpox diversified in the cow, and the lost security of Jenner's single puncture was recovered in tattoo!

Appealing to the sentiment of medical men in favour of vaccination as exhibited in the replies to Simon's queries in 1857—a fallacy for conviction which Mr. Lowe would have been quick to detect if advanced for any clerical, scholastic, or other trading interest, he observed—

The terrible malady falls heavily upon young children: in Vaccination is their defence. Consider, then, what a painful responsibility will rest upon us, if, in the face of almost unanimous medical testimony, we leave them to perish, and communicate a dreadful contagion throughout the country. These children have no discretion of their own; and it is a profanation of liberty and self-government to say that any man has a right to set up his own

sordid and brutal prejudices against such medical opinion, and expose his child to disease and death.

Words, ferocious words; but how do they bear examination? Why should disbelief in vaccination be stigmatised as sordid and brutal prejudice? Why should parliamentary affection for children surpass parental affection? The argument, if valid, would equally apply to any matter in which the conviction of a minority was at variance with that of a majority; and if in such circumstances the minority is bound to submission, where is the substance answering to civil and religious liberty? If the clear scientific persuasion of the smallest minority concerning such a matter as vaccination is to be subjected to vulgar medical dictation by the brute force of the majority, what form of tyranny may not be justified?

The Bill [continued Mr. Lowe] which I wish to pass into law is very simple. All that it enacts is that Poor Law Boards may appoint persons to prosecute those whom the medical officers report ought to be prosecuted.

And the bill was passed without division. Mr. Duncombe and Mr. Coningham protested, but neither had mastered the question so as to offer effective opposition. Mr. Coningham observed that figures might be made to prove anything; and as concerned the unanimous opinion of medical men, they had to bear in mind the saying, "There is nothing like leather." If smallpox had fallen off, there were extensive sanitary improvements to account for the fall; and, for his part, he placed his trust much more in better conditions of life for the people than in a prescription like vaccination.

The Act obtained did not fulfil the expectations of its promoters. Mr. Lowe's bitter regret for thousands of lives lost in consequence of his concession to Mr. Duncombe proved to be wasted emotion. Guardians did not exercise their powers as inquisitors and persecutors with adequate energy. Sir Morton Peto, in the House of Commons, on 14th March, 1864, asked—

Whether the registration of Vaccination is not a total failure, alike for statistical purposes and for the prosecution of offenders

under the Compulsory Act; and whether it is the intention of the Government to amend the law this session.

To which Mr. Lowe made answer—

It is quite true that the system of registration under the Act is very bad, but it would cost a great deal of money to improve it. Moreover, even when improved, it would not make the measures for compulsion effectual to any extent. The great difficulty of working compulsion is not so much due to defective legislation as to the reluctance to prosecute poor people for disobedience to the law, the neglect of which is countenanced by too many who ought to know better. I am sorry, therefore, I cannot hold out any hope of improving the system.

The medical officers of the Poor Law Board were, however, intent upon coercive legislation; and Mr. H. A. Bruce, more pliant than Mr. Lowe, introduced a bill of their contriving in 1866, which he assured the House of Commons "involved no new principle, and merely consolidated provisions dispersed over six Acts of Parliament, *with a few amendments.*" On going into committee on the bill, 11th April, 1866, he delivered an elaborate defence of vaccination, prepared for him by the astute promoters of the measure, starting in this fashion—

At the close of last century Dr. Jenner achieved his immortal discovery by which, perhaps, more misery has been prevented through the alleviation of pain and the preservation of life than by any other discovery that has ever been made.

Spoken from whatever elevation, nothing divides talk like this from that of a quack at a country fair. Having struck the note, Mr. Bruce ran through the familiar gamut of assertion wherewith the rite of vaccination is supposed to be justified. The following is a sample of the advocacy imposed upon him—

A statement has been widely circulated that Syphilis has been communicated by Vaccination. Millions of children have been vaccinated in the last sixty years, but not a single case has occurred in which it has been proved that Syphilis has been communicated. A case is alleged to have occurred in France in which a child had been vaccinated from another which inherited Syphilis, but the surgeon in that case, in taking lymph from a child covered with syphilitic blotches, acted in monstrous disregard of common pru-

dence and medical knowledge. No such case, so far as the most careful medical research can discover, has happened in this country.

Whilst this statement would now incur general discredit, yet even in 1866 the official prompters of Mr. Bruce presumed over much on public credulity. It was not probable that what vaccinators did not wish they would discover; or, if discovered, proclaim. Nevertheless, the denunciation of the "alleged" French instance was entirely inconsistent with the contention that syphilis could not be communicated from a syphilitic vaccinifer, blotched or unblotched. So much it was imperative to maintain, for it was obvious that the complete vaccination of any population must involve infants with latent syphilis whose virus might transfer the disease to the untainted. This peril, opponents of vaccination, from Cobbett onwards, had recognised; and as its recognition was prejudicial to vaccination, its possibility was stoutly outsworn until manifold and indisputable evidence compelled its admission, and shifted the question to the extent of its frequency.

Mr. Henley, following Mr. Bruce, spoke some homely sense—

We all know that when we want anything of the kind done, the medical man entertains us with a fine cock-and-bull story about waiting until he can get lymph from a healthy child. This caution implies risk; and though it is said that not a single case of injury has occurred in sixty years, yet nobody will persuade me that medical men take all these pains (where they are well paid and watched) if there are not grounds for the exercise of care. Undoubtedly it was an abomination to take vaccine from a diseased child, but how is a public vaccinator to know that any child is diseased? If he inquires too particularly, he will run the risk of a slapped face from the mother for his trouble.

Mr. Henley also drew attention to the claims made for vaccination, coupled with the admission that the greater part of it was good for little—

One remarkable statement has been made—that there has been an examination of 500,000 children belonging to the humbler classes chiefly affected by Compulsory Vaccination. Of the number so examined only one in eight was found to have been perfectly

vaccinated, which fact involves the further fact that seven out of the eight were imperfectly vaccinated, or not vaccinated at all. If only one in eight has been perfectly vaccinated, great doubt will come upon many people's minds as to the matter with which the others have been inoculated.

Much in the bill was crude and impracticable, and Mr. Ayrton expressed the sense of many in the House when he observed—

The bill before us is badly drawn, and bears too much the marks of its official origin. Great powers have been taken for the vaccinating department, but nothing is provided for the protection of the public. It seems to me that if Vaccination is to be enforced by penalties, public vaccinators should be subject to penalties for inefficient and injudicious work. I have been entrusted with a great many petitions against the bill, and I have been much impressed with the admission that the existing system of Vaccination has entirely failed in effecting its object. The bill will have to be referred to a Committee, and as many believe that Vaccination does as much harm as good, I trust the members will not be fettered in their inquiries.

It is needless to say the asserted failure of vaccination was an artifice to induce Parliament to pass the bill. The public vaccinations for 1863, 1864, and 1865, were as numerous as ever, and accompanied with a marked increase of smallpox. No doubt vaccination was a failure, but in a different sense from that in which the word was used to acquire increase of power and pay for the application of the rite. The bill was referred to a select committee, who reported; but the Conservatives having displaced the Liberals, it was withdrawn. Mr. Corry, in announcing the fact to the House of Commons, 23rd July, 1866, said—

I have ascertained that the measure is likely to meet with great opposition on both sides of the House; and it is, therefore, very doubtful whether it could be carried at this late period of the session. Moreover, some of its provisions require further and careful consideration.

The bill was framed and promoted by the Poor Law Board, independently of Liberals and Conservatives, the problem of the medical officials being, "How far is it possible to obtain the assent of Parliament to what we

consider desirable." There were limits to parliamentary complaisance, however wide, and, informed by the experience of 1866, a revised bill was introduced to the House of Commons by Lord Robert Montagu in 1867, who, like his predecessors, reproduced the instructions of his advisers with sufficient flavour to pass them off as his own. A portion of his business was to obtain recognition for the payment of extra fees for successful vaccination—

> When an Inspector reports that certain Vaccinations are of the 1st class, the Public Vaccinator will receive 1s. over and above the sum paid by the Guardians for each Vaccination he has performed. If the Vaccinations are reported of the 2nd class, he will receive 8d. For 3rd class Vaccinations nothing in excess of the Guardians' contract fee will be paid.

This graduation of vaccination excited no comment though why aught save first-class should have been accounted tolerable, or paid for, was far from obvious. The possible amount chargeable for these awards was thus estimated—

> The ratio of children born to the population is about 3½ per cent., which gives 700,000 a year for the population of 20 millions. Reckoning that four-fifths of these children, or 560,000, are vaccinated gratuitously during the year, the expenditure will be £28,000 if all the Vaccinations are 1st class, and £18,500 if 2nd class. Shall we, then, think it too much if, for a sum between £18,500 and £28,000 we ensure that there shall never occur a case of smallpox, and that we save 7,000 lives a year?

Such was the argument put into the mouth of Lord Robert Montagu for the persuasion of Parliament! Only pay an extra price for first and second class vaccination, and not a case of smallpox shall occur in England, and 7,000 lives a year shall be saved! When we inquire where the 7,000 lives a year were lost, we discover how boldly the credulity of Parliament was imposed upon. There died of smallpox in England and Wales—

In 1861	1,320	In 1864	7,684
1862	1,628	1865	6,411
1863	5,964	1866	2,977

Where, then, were the 7,000 lives to save? In 1864

the mortality exceeded 7,000; but to select an extreme year and represent it as ordinary would have incurred a sharp epithet if practised in finance instead of smallpox.

A similar fable of salvation from smallpox was related by Lord Robert Montagu concerning Scotland. He said—

> It is wiser to save people's lives than to consult their prejudices. The example of Scotland shows the value of a thorough-going Vaccination Act. The measure for that country has reduced the smallpox death-rate from 2,000 to 120 per annum.

The Act to extend and make Vaccination compulsory in Scotland was passed in 1863—an Act little else than superfluous, for the people were vaccinated without it. There died of smallpox in Scotland—

In 1859	... ...	682	In 1863	... ...	1,648
1860	... ...	1,495	1864	... ...	1,741
1861	... ...	766	1865	... ...	383
1862	... ...	426	1866	... ...	200
		3,369			3,972

The average of these eight years was 907 deaths annually; and one inquires with some amaze, Where were the 2,000 which compulsory vaccination reduced to 120? It is difficult to repress some indignation over such measureless misrepresentation; nor to point out that we are not dealing with theologians, who are often assumed to hold a license for prevarication, but with medical officials with M.P.'s for spokesmen. The following years, of which Lord Robert Montagu, speaking in 1867, was necessarily ignorant, gave these deaths from smallpox in Scotland—

In 1867	... ...	100	In 1870	... ...	114
1868	... ...	15	1871	... ...	1,442
1869	... ...	64	1872	... ...	2,488

Smallpox was proclaimed "stamped-out" of Scotland in 1870, but the epidemic of 1871-72 proved how vain was the boast. Smallpox, in common with typhus, may be exterminated, but by no such irrelevance as vaccination.

One object of the bill was the reconstruction of vacci-

nation districts, so as to secure sufficient numbers for arm-to-arm practice.

It is necessary [said Lord R. Montagu] to successful Vaccination that the two classes of patients, those who have been vaccinated eight days before should meet those who are to be vaccinated, so that the doctor may take vaccine from the arms of one set and transfer it to those of the other.

Mr. Henley, in opposition, maintained that careful vaccination on such terms was impracticable, saying—

It seems a large proportion of the Vaccination provided by the public is imperfect; but the bill before us is wholly inadequate to secure Vaccination that is trustworthy. If a vaccinator never sees a child until it is brought to him, and knows nothing of its parentage, how can he judge whether it is fit to be vaccinated, or fit to serve for the vaccination of others? No torture will induce a mother to confess before company that anything ails her baby. Every one who knows anything of women is aware that they will conceal in public what they may reveal in the privacy of home. The shame of making known her own infirmities, or those of her family, will keep a woman silent in a crowd, and if she does reply to awkward questions, it will be to mislead. Medical men will consequently be perplexed and outwitted; and, therefore, on the terms prescribed a safe and efficient system of Vaccination cannot be secured.

Further, said Mr. Henley, the bill was defective because no attempt was made to conciliate the prejudices or consult the convenience of the people who were compelled to have their children vaccinated.

The bill is one of pure coercion, making no allowance for those who are brought under its scope. It must not be forgotten that the poor mother is not able to do much within the month after her confinement. The period of three months specified within which Vaccination must be effected will press very severely upon the lower orders. We are told that no district of less than 5,000 inhabitants will work successfully, and that 10,000 is a better number. If country districts are to comprise 5,000, how many miles will poor folk have to travel to reach a vaccination station? Consider the inconvenience it will be to a woman to drag her child two or three miles for vaccination, and be obliged to go a second time for inspection! The medical authorities insist that four punctures at least ought to be made on the unfortunate children. Not only are those four wounds to be inflicted, but the children are to be brought in all weathers to have their wounds opened and matter extracted for the benefit of others, thus prolonging their sufferings and the

cares of their mothers. If we are to act upon the principle of doing as we should be done by, I would ask how you would like to be compelled to carry your children to a vaccination station and have them mixed up with all and sundry, and inoculated at a hazard with you know not what? For myself I see no difficulty in having the children of the poor vaccinated at their own homes. It would be far better to pay more and work discriminately than let the people think there is one law for the rich and another for the poor. If you simply try to drive you will find the people apt to kick, and still more ready to evade the restrictions you put upon them.

Mr. Kendall confirmed Mr. Henley, saying—

As Chairman of a large Union, I have seen great inconvenience from the crowding of children at vaccination stations. They are taken to those stations whether wet or dry, and cold and shivering are kept huddled together in a manner most likely to breed illness and diffuse infection.

Mr. Lowe sneered at Mr. Henley's concern for the poor, reminding him that the wounds he deplored would save them from a loathsome disease. Mr. Henley did not dispute the salvation, as he might have done, but pleaded for its more considerate performance. Spite, too, of his assumption, there *is* one law for the rich and another for the poor. Compulsory vaccination as applied to the majority would never be tolerated by the upper and middle class minority; nor would a plutocratic Parliament have entertained so profane a project. Nor (it must be said) would working men show themselves much more enduring in their own persons. The victims of the law are their wives and children; and it is surprising how much indignity and cruelty they will endure in these helpless dependents. Mr. Henley was more chivalrous for them than they are for themselves.

An argument for fresh legislation was the failure of the Act of 1853. Mr. Brady said—

As a medical man I can testify that medical men are almost unanimous in favour of Compulsory Vaccination; but in order to give the public the full benefit of the system it must be fairly paid for. We shall be penny wise and pound foolish unless the persons employed to carry out this measure are liberally remunerated. When the bill of 1853 was before the House, I said the remuneration was inadequate, and that the Act would be a failure, and that prediction has proved true.

That the Act of 1853 was a failure, in the sense of not securing the vaccination of the people, was untrue—though necessarily true as concerned the prevention of smallpox. The assertion of failure in 1867 was an artifice to overcome the apathy of Parliament. It was assumed that there was a population to be vaccinated, and vaccinated in a new and superior fashion, if only better pay were provided. More money was wanted to work the Vaccination Mill. In the words of Lord Robert Montagu—

On the birth of a child being registered, the Registrar is bound to give notice to the parent, and to supply him with proper forms, whether for public or private Vaccination. He will enter in a book the name of the child, with the means of identification. After Vaccination, the Public Vaccinator will send the certificate of successful Vaccination to the Registrar, who will enter it in his book. Thus the Registrar will know which children have been registered in his district and which have not; which children are liable to Smallpox and which are not liable. [*O Credulitas!*] Then it is made the interest of all concerned to work the system and enforce its checks. It is the interest of every Local Registrar to hunt up every birth, because for every entry he has 1s. It is his interest to obtain the certificate of successful Vaccination, for entering which he has 3d. It is the interest of the Public Vaccinator to operate on as many children as possible, because for each successful operation he has at least 1s. 6d., and for first class work an extra 1s. It is the interest of the parent to have his child vaccinated, for he is otherwise subject to legal proceedings and a penalty of 20s.

Colonel Barttelot objected, saying—

There are about 750,000 births annually in this country, and the parents of the majority surely deserve some consideration. 250,000 of them can neither read or write, yet they are liable to a fine of 20s. if they do not comply with the printed forms of this Act. It would be much better to send doctors to the homes of the children than collect mothers and infants in crowds at vaccination stations.

Mr. Bruce replied that it was proposed to do nothing new—

Compulsory Vaccination on the same terms has been the law of the land since 1853. The present bill lays down no new principle. It merely collects the scattered provisions of the law, and supplies machinery found necessary after much experience.

The observation was, no doubt, ingenuous on the part

of the speaker; but, misled himself, he assisted to mislead the House. The bill, Section 31, ran as follows—

If any Registrar, or any Officer appointed by the Guardians to enforce the provisions of this Act, shall give information in writing to a Justice of the Peace, that he has reason to believe that any child under the age of 14 years, being within the Union or Parish for which the informant acts, has not been successfully vaccinated, and that he has given notice to the parent or person having the custody of such child to procure its being vaccinated, and that this notice has been disregarded, the Justice may summon such parent or person to appear with the child before him at a certain time and place, and upon the appearance, if the Justice shall find, after such examination as he shall deem necessary, that the child has not been vaccinated, nor has already had the Small-pox, he may, if he see fit, make an order under his hand and seal directing such child to be vaccinated within a certain time; and if, at the expiration of such time, the child shall not have been so vaccinated, or shall not be shown to be then unfit to be vaccinated, or to be insusceptible of Vaccination, the person upon whom such an order shall have been made shall be proceeded against summarily, and, unless he can show some reasonable ground for his omission to carry the order into effect, shall be liable to a penalty not exceeding 20s.

Yet, said Mr. Bruce, it was proposed to do nothing new! Here was a development of compulsion subjecting a parent to prosecution during fourteen years of the life of his child, and it was nothing new! What resulted from this aggravation of the law, devised with craft and enacted with indifference, remains to be seen.

The bill was opposed by Sir J. Clarke Jervoise, Mr. Thomas Chambers, and Mr. Barrow. Mr. Chambers prophesied—

I am persuaded that when the bill is passed an agitation will commence which will never cease until the Act is repealed.

The carelessness and indifference of the House were, however, insuperable. It was legislation for "the lower orders," and concerned "respectable folk" not at all. The bill was read a third time without opposition, slipped through the Lords unopposed, and received the Royal assent, 12th August, 1867, as 30 and 31 VICTORIÆ, Cap. 84—*An Act to consolidate and amend the Laws relating to Vaccination.*

As another example of the advocacy with which this bill was commended to the House of Commons, I take the following from the close of the speech of Lord Robert Montagu, when introducing it to committee, 14th June, 1867. He said—

Smallpox differs from other epidemics in this, that it is one of the worst, but is absolutely preventible. In other diseases all that can be done by the removal of predisposing conditions is to mitigate their virulence; but Smallpox may be altogether prevented. If, then, one who raises his hand against another and kills him is guilty of murder, of what shall he be guilty who, by voice or vote in this House, endeavours to prevent the passing of a measure which will make it absolutely certain that Smallpox shall no longer kill 7,000 a-year in this country!

This absurd adjuration was too much for Mr. Henley, who observed—

The somewhat formidable close of the noble Lord's speech made it difficult to know whether I ought not to walk out of the House and leave the responsibility of the measure to others. He said those who objected to the bill would be guilty of the deaths of those who died of Smallpox.

Lord Robert Montagu—I said that Smallpox was so far preventible that those who stopped the adoption of Vaccination would be guilty of the deaths of 7,000 children a-year.

Mr. Henley—I understood the noble Lord to say that they would incur that guilt if they objected to the machinery of the bill.

Lord Robert Montagu—No; not to its machinery.

Mr. Henley—Then I do not know precisely what the noble Lord does mean.

In short, the bill was neither honestly advocated or seriously considered. On the one hand, members of Parliament were prejudiced, ignorant and credulous, and careless as to legislation that did not affect their families or those of their influential constituents. On the other hand there was a knot of medical officials eager for power and the aggrandisement of their profession, who did not disdain to practise upon the prejudice, the ignorance, and the credulity of Parliament. The result was an insufferable outrage upon the rights of every nonconformist—an outrage which, if perpetrated on the theological instead of the scientific conscience, would have roused Englishmen to fever heat.

CHAPTER XLII.

THE GATHERING MOVEMENT—1867-70.

SECTION 31 of the Act of 1867 implied the doom of Vaccination. It was bad enough to fine a parent for refusing to vaccinate his child; it was, however, a circumscribed annoyance; but to make of refusal a continuous offence until a child attained the age of fourteen was to set up a cause of quarrel that had to be fought out. Slavery in the United States is abolished, but slavery might have endured to this day had the Southerners been more forbearing; but, in the arrogance of their power, they imposed on the Union the Fugitive Slave Law, compelling the people of the North to surrender runaway negroes. This triumph of the slaveholders determined the fate of slavery. In like manner the arrogance of the vaccinators overcame their prudence. Resolved to subdue resistance to their rite, they drove resistance to extremity, and set up an irreducible insurrection. As a medical prescription accepted at discretion, vaccination might have survived unquestioned and paid for; but its transition into an aggressive statute removed it from the safe realm of professional mystery into the jurisdiction of common sense, common observation, and every man's business.

Sec. 31, Act '67, was quickly turned to account by the medical officials who had devised and imposed it upon the indifference of Parliament. They had, of course, to operate through local poor-law authorities—a painful necessity; but guardians were occasionally as fanatical as themselves, and exasperated, too, that their petty authority should be set at naught, and especially by parents in humble life. Consequently, here and there over the country continued prosecutions for refusing to vaccinate were initiated, stirring up strife, begetting sympathy with the prosecuted, and gradually converting

vaccination into a living political question. Whatever may be thought of Sec. 31, Act '67, all will allow that it drew a line and established irritation and conflict. Opposition to vaccination had hitherto to contend with nothing so deadly as apathy, but from that drawback it was now delivered. On the other hand, in many parishes, Sec. 31, Act '67 was allowed to make no difference. Those who disliked vaccination were warned, or prosecuted once, and then let alone; but this leniency served to accentuate the severity practised elsewhere, and to render the law still more odious by reason of the flagrant inequality of its administration.

The scientific opposition to vaccination, initiated by Mr. John Gibbs in 1855, had for some years few accessions, and it required faith in truth in full measure to persist in its advocacy. The Jennerian tradition was so rooted in the public mind that to question it savoured of paradox or profanity. There were occasional manifestations of scepticism when smallpox attacked the vaccinated, but doubt was crushed down as impious and dangerous to established confidence. Mr. Herbert Spencer, for example, in *Social Statics*, published in 1851, observed—

> The measures enjoined by the Vaccination Act of 1840 were to have exterminated Smallpox; yet the reports of the Registrar-General show that deaths from Smallpox have been increasing.

To such matter-of-fact criticism, any answer must have taken form in the style of the bewildered divine, who exclaimed, "Dear brethren, what theology can we enjoy if such objections be entertained!"

Dr. Charles T. Pearce was one of the first to unite with Mr. Gibbs in his labours. As editor of a medical journal, he happened to receive an article from Mr. Gibbs which set him thinking, and as the result of his inquiries, he came out an enthusiastic anti-vaccinator. He made the question of vaccination completely his own, and lectured on the subject throughout the country, eager and ready for combat. In Northampton, in 1860, he held his first public debate, and under his influence

the town became a centre of resistance to the compulsory law, so that Mr. Charles Gilpin, M.P. for the borough, addressing his constituents in 1870, thus expressed himself—

I have always thought that when we try to enforce one of the ever-changing opinions of medical men, we touch upon the liberty of the subject and the rights of human nature. I find that a number of parents are fined because they are convinced that Vaccination is useless and injurious. I ask, What is the character of those parents? Are they idle? Are they dissolute? Are they drunken? Are they careless of the welfare of their children? The answer is emphatically, No! They are thoughtful, they are industrious, they are sober. They are men who look into the reasons of things, and who decline to be driven into any course of conduct which they do not rationally approve. When I was in business in the City of London I had my goods seized almost every year for Church rates. I objected to the law, and with a free heart and a firm voice, I said I will endure the penalty. I would not obey a law which I knew to be wrong. Therefore it is that I sympathise with those who are persuaded that Vaccination is wrong; and for their encouragement and consolation let me say, that as compulsory Church rates were abolished because of the stedfast testimony borne against them by Nonconformists, so will compulsion as applied to Vaccination, if resistance is consistently and seriously maintained. As the Society of Friends has demonstrated, no law can survive under the persistent protest of conscience.

Tenacity was the distinction of Dr. Pearce. Undismayed by whatever odds, he maintained his position with deliberation and patience, and by neither historical, statistical, or physiological data was it possible to circumvent him. When he entered into the controversy in 1856, fool and fanatic was the summary designation of whoever ventured to dispute the salvation wrought by vaccination; but, living until 1883, he witnessed such epithets received with amusement as denoting the ill-humour and impotence of those who employed them.

An energetic advocate of the good cause appeared in Dr. W. J. Collins, who, after twenty years of service in London as public vaccinator, felt compelled to renounce the practice as useless and injurious. He stated his conviction frankly and forcibly before the St. Pancras Sani-

tary Committee in 1863,* and in an essay, vigorous with mother-wit, published in 1867,† he communicated much useful and unpleasant information to the credulous and deceived public. To contend with a judgment thus instructed and qualified was useless; and those who were affected by the exposure took care to avoid it. Nor considering the danger to the craft from discussion, was the policy injudicious. Truth has many adversaries, but none so hard to overcome as the non-resistant silence of timorous self-interest.

A leader and organiser of the opposition was wanted, and he appeared in Richard Butler Gibbs, cousin of John Gibbs, who, as we have seen, framed the first systematic indictment of vaccination in 1855. Mr. Gibbs, of Irish parentage, was born in London in 1822, and in the course of a commercial career became agent at Pease's West Collieries for Joseph Pease of Darlington, the first Quaker M.P. It was in 1863, when a member of the Bishop Auckland board of guardians, that he first moved publicly against vaccination, and then less against the practice itself than against its prescription by the authority at that time vested in the Privy Council. He cautioned his colleagues that they were likely to become (as they since have) the tools of a central medical clique. Subsequently finding himself comparatively free from business, he devoted himself to the cause with which his name has been identified. Gathering together the scattered elements of resistance, he formed in 1866 the Anti-Compulsory Vaccination League, and travelled over the country, lecturing and holding public meetings. The enactment of repeated penalties for non-vaccination, strenuously resisted by Mr. Gibbs, established "a raw," and conferred on the League a grievance and purpose

* *Twenty Years' Experience of a Public Vaccinator.* Read before the Sanitary Committee of St. Pancras, 9th June, 1863. Third edition. London, 1866.

† *Have you been Vaccinated? and What Protection is Vaccination against Smallpox?* By William J. Collins, M.D. Fourth edition. London, 1868.

everywhere recognised as indisputable by the people. Sec. 31, Act '67 was in a popular sense the making of the agitation against vaccination; and it has been maintained (in a sense fortunately) until even the withdrawal of the aggravation cannot save vaccination itself from ultimate rejection. What at the moment we like least, often in the end serves us best.

Mr. Henry Pitman of Manchester entered actively into the movement. He had observed the ill effects of vaccination upon one of his own children, and in connection with Mr. R. B. Gibbs organised public meetings in Manchester and other places. In 1869 he tried how far a penny journal would succeed, and started *The Anti-Vaccinator* which ran for eighteen weeks. As editor of *The Co-operator*, which he conducted for ten years, he gave prominence to vaccination news, and in 1870 adjoined *Anti-Vaccinator* to the title, which was continued until *The Co-operative News* was established in 1871, when he maintained the publication as *The Anti-Vaccinator* until the close of the year. In 1876 Mr. Pitman bore testimony to his convictions by going to the Knutsford House of Correction rather than pay the fine and costs imposed upon him for refusing to have his daughter, Violet, vaccinated, and in *Prison Thoughts* conveyed to others the lesson of his experience. Mr. Pitman has been remarkably successful in impressing public men with his opinions. Courteous and persistent, he has won consideration where rougher speech might not have prevailed.

Professor F. W. Newman was led to a knowledge of the dangers of vaccination by Mr. Henry Pitman; and those who have been observant of his career in later years know with what courage and consistency he has asserted his convictions. Having asked the Professor how he became concerned in the opposition to vaccination, he favoured me thus—

"The outline of my mental history in this direction is as follows. Circumstances had led me to respect Mr. Henry Pitman as a competent and truthful witness of

fact. On a certain occasion he spoke publicly on the miserable state to which he had seen a poor lad, Ira Connell of Southport, reduced by vaccination. Ira's parents, and his brothers and sisters, were all hale: his mother attested that previous to vaccination so was Ira. But *after* vaccination, Ira had never recovered its dreadful effects, three of his four limbs being crippled.

"Some years later, I myself saw Ira Connell at Southport. I think his age was then 25, but am not sure. He had only one leg sound, and hardly one arm. I will not undertake to describe his state exactly, but it was *very pitiable.* I am happy to add that in nine or ten years more he has gradually recovered, so as at least not to be visibly crippled.

"Previously I had *refused to read* anti-vaccination tracts, *having too much already to read.* I had never *known* or *heard* in my own circles of mischief from vaccination, and when some German ladies spoke of its '*horrors*' I thought them absurd and fanatical; but now that Henry Pitman publicly attested *a fact,* this woke me up to the duty of further inquiry.

"I at once remembered that in my early youth or boyhood I had been staggered by reading in a medical journal that experience made it impossible to sustain Jenner's doctrine that vaccination was a certain preventive of smallpox; but the writer nevertheless urged that it was valuable for making smallpox *milder* if it did follow. This struck me as an ugly shifting of the basis, and far from plausible. One school-and-college fellow of mine, *after vaccination,* had smallpox that marked him; but nothing further led me to pursue the argument.

"I now at once saw that *compulsory* vaccination was an infamy, since Parliament could not secure any one from Ira Connell's fate: and I was indignant on learning that doctors pooh-poohed such miseries, as endured '*for the general good,*' a theory which justifies any amount of tyranny under the influence of superstition; and I presently remembered that in Roman pestilences *sacrifices* were believed efficacious, and the arguments of the

priests and senators were quite as good as those of our physicians.

"I find that in 1869 I had a sharp debate with a clever young student of Medicine, who poured out the doctrines of the Faculty, which he had been getting up. My respect for the whole Faculty has rapidly got less and less; it had long been declining. I need not obtrude on you the depth to which it has now sunk, excepting always a noble few, who are what Heretics were to the Mediæval Church.

"Next I saw that no Parliament or King has, or can have, any right *(on medical theory)* to stick a poisoned lancet into a *healthy* person; and that to fancy that Human Health can be improved by altering the natural blood of Health is *an imbecile contemptible fancy.* Moreover, that unless Vaccination is believed to *remove the causes* of smallpox, those causes would entail disease in other ways, and perhaps worse, by suppressing *the natural eruption,* which eruption alone is called 'Smallpox.' My mind was thus decided.

"I did not learn till some years later *(what alone concerns Parliament)* that the more active is smallpox, the less is the Total Mortality of any year; and conversely, the less active the smallpox, the greater is the Total Mortality. This is the only form of statistics worth attending to. All the rest is dust thrown in our eyes.

"Statistics not founded on a scientific principle are the commonest *nidus* of fallacy; but if *any* statistics are to be listened to, those of Total Mortality are the least open to suspicion. The *primâ facie* evidence is, that instead of Vaccination saving yearly 80,000 lives (Sir Lyon Playfair's monstrous assertion) Vaccination does only harm; but that Smallpox *saves* every year many lives (some hundreds or thousands) by a natural eruption, under the morbid circumstances *desirable.*"

The Countess de Noailles contributed most efficient assistance toward opening the public mind and letting in light. In a communication her ladyship says—

"You ask me how it was that my name came to be connected with the present anti-vaccination movement.

"It was in this way. On my return to England in 1865, Mrs. Cowper-Temple, now Lady Mount Temple, asked me to visit the office of the Ladies' Sanitary Association, which I had joined her in starting four years before. I had wished the Association to be called the Ladies' Association for the Protection of the Health of the Children of the Poor; but that was thought too long a name, and was changed; and I mention it only to explain what my idea was in helping to form the Society. Well, on visiting the office of the Association, I saw among the sanitary tracts one with the title, *When were you vaccinated?* On reading the words, it struck me suddenly that vaccination was all wrong, but as I knew nothing whatever about it, and had heard naught but praise of the practice, I told the excellent secretary of the Association my misgivings on the subject, and she set to work to find out all that was known or thought on the question. Miss Griffiths soon learnt that three relatives—John, Richard, and George Gibbs—had for twenty years been writing and working against vaccination, besides Dr. Collins and others. Seeing that I was not alone in my conviction, I resolved to elicit more opinion on the subject by giving a prize for the best essay on the same, setting forth the supposed benefits, dangers, etc. Miss Griffiths went heart and soul into the question, and with the help of Dr. Druitt, I think, she had judges named and the prize of £100 offered. The judges were Mr. Marson, Dr. Richardson, and Dr. Francis Webb—all in favour of vaccination. The great length of the essay by Dr. Ballard gave it a claim for the prize, and the tremendous because *unavoidable* admissions as to the dreadful dangers of vaccination contained in this Prize Essay, have caused the doctors to try to suppress it—so at least I have heard.

"Miss Griffiths sent me in November, 1866, the *Lancet*, containing a horrible account of the poisoning of thirty-six children in Morbihan, Brittany, by public vaccination.

"My forebodings being thus so terribly confirmed, I tried to interest all the doctors who advised the Ladies' Sanitary Association in the new difficulties in the way of this dreadful practice; but the only one who lent an ear to the sad tale was Dr. Garth Wilkinson, who began mildly, but afterwards waxed valiant in fight. May he and the little band which his genius has helped to bring into the field 'soon put to flight the armies of the aliens.'

"In 1867 a letter from the Rev. W. Hume-Rothery against compulsory vaccination struck me, and he set to work at the question in the co-operative newspapers; and latterly in the *Reporter*, in which he has been ably helped by Mrs. Hume-Rothery, the daughter of the late Mr. Joseph Hume, M.P. The strength given to the bad law by Lord Robert Montagu's Act in 1867 roused its enemies at the same time; and, feeling that my task was done, I left the contest to abler hands.

"I thus found that the Association I had inaugurated in order '*to protect the health of poor children*,' was being made into an instrument to bind them through their mothers' ignorance to the most wholesale plan for their degeneration, if not destruction, ever invented by the mind of man. It was in vain that I tried to get the ladies of the Sanitary Association to think over the matter. I was always met by the remark that it was *a medical question* and one which *doctors alone could decide;* and all I could obtain of them was to allow me to buy up the offending tract and to remain neutral in the question. When I left the Association a few years after, the tract was circulated again.

"The compulsory law seems to me well described in these words of Carlyle:—'To decree *injustice* by a *law*—inspired prophets have long since seen, what every clear soul may still see, that of all Anarchies and Devil-worships there is none like this; that this is the "throne of iniquity" set up in the name of the Highest, the human apotheosis of Anarchy itself.'"

Dr. Ballard's essay was of itself a notable achievement. Written in defence of vaccination, the difficulties, dangers

and futility of the practice were so largely revealed, that any thoughtful reader was compelled to inquire, Where shall we find compensation for all this trouble, these risks, these sufferings? Dr. Ballard's essay soon ran out of print, and the author was judiciously enlisted in the medical service of the Local Government Board.

In Dr. Garth Wilkinson the movement obtained the assistance not only of an able physician, but of one whom Emerson has described as "a philosophic critic, with a coequal vigour of understanding and imagination comparable only to Lord Bacon's;" and "with a rhetoric like the armoury of the invincible knights of old." Having asked Dr. Wilkinson how he came over to the side we identify with sound science and sound sense, he answered—

"The early History of my Opposition to Vaccination is, briefly, this—I had not considered Vaccination a question; but practised it when required. About 1865 the Countess de Noailles assailed my conscience on the subject, and her earnestness forced me to study it. She was backed by the late Mrs. Gibbs, then Miss Griffiths. Through Miss Griffiths I sent the following message to Madame de Noailles—'Tell her Ladyship that the question is comparatively unimportant. Vaccination is an infinitesimal affair; its reform will come in with greater reforms.' I also wrote to Madame that the only short way of getting rid of the Medical vested interest was by paying half a million or a million of money down to the Profession, and buying the slaves, the people, out, as the West Indian Blacks were bought out.

"After-studies extending over eighteen years have convinced me that I was wrong in my estimate of the smallness of the Vaccination question compared with other Evils. As forced upon every British Cradle, I see it as a Monster instead of a Poisonous Midge; a Devourer of Nations. As a Destroyer of the Honesty and Humanity of Medicine, which is through it a deeply-degraded Profession. As a Tyrant which is the Parent of a brood of Tyrants, and through Pasteur and his like a Universal Pollution Master. As a Ghoul which sits upon Parlia-

ment, and enforces Contamination by Law, and prepares the way for endless violations of personal liberty and sound sense at the bidding of cruel experts. Not denying other forms of Social Wickedness, I now, after careful study, regard Vaccination as one of the greatest and deepest forms, abolishing the last hope and resort of races, the new-born soundness of the Human Body."

The agitation against compulsory vaccination prospered under the leadership of Mr. Gibbs. He sought help on all sides, and harmonised its various elements to the common purpose of the League. In his various labours he derived efficient assistance from his brother, Mr. G. S. Gibbs of Darlington, who displayed remarkable ability in the interpretation of vital statistics and in the exposure of their misapplications. Mr. Gibbs established branches of the League wherever there were adversaries of the practice, and was especially successful in the north of England. The relentless application of Sec. 31, Act '67, in certain parts of the country did much to rouse public attention and sympathy. Parents were repeatedly fined for persistent refusal to have children vaccinated, and in default of payment had their property seized, or were committed to prison, sometimes with hard labour. Occasionally sentences were accompanied with gross insolence from the bench. For example, Mr. Bowman having pleaded at Newcastle his conscientious conviction that vaccination might prove injurious to his child, whilst it could never save him from smallpox, was compared to a thief by the magistrate, who said, "I once knew a man who had conscientious scruples against working so long as he could live by stealing; and I do not think conscience of that sort is entitled to respect." Law on such terms naturally invites execration, and many who might hold by vaccination are thereby turned against it.

By some it was thought questionable whether Sec. 31, Act '67, did afford warrant for repeated prosecutions. Mr. John Candlish, M.P. for Sunderland, who sat on the Committee of 1866 which dealt with the Bill which became law in 1867, maintained "that it was not intended

that penalties should be repeated, but that one penalty should be a discharge from any obligation to submit a child to vaccination." It is needless to say, an Act of Parliament is not to be interpreted by the intentions of its framers, but by its words. Moreover, if intentions are brought into question, it would be fair to set intentions against intentions. Several who were concerned in promoting the Act of '67 had intentions more arbitrary than were conveyed in Sec. 31.

The question was raised by the Rev. H. J. Allen, Primitive Methodist. He had been repeatedy before the bench at St. Neots, and was committed to prison for fourteen days, but, having paid the fine, £5, was liberated. In less than a month, he was summoned again, and fined £1 for each of his children, including costs. An appeal was made to the Court of Queen's Bench in 1870, and judgment confirmed the severer interpretation of Sec. 31, Act '67. Lord Chief Justice Cockburn held that a parent having been fined under the Act for disobeying an order to have his child vaccinated, may be proceeded against from time to time as long as the child remains unvaccinated. He declined to discuss whether vaccination was good or bad; the Legislature had treated it as a matter of great importance, and had passed Acts to ensure attention to it; that being so, he could not doubt that the intention of the Legislature was not merely to impose a penalty upon a person, once and for all, for having omitted to do that which the public health and safety required; but to enforce obedience to the requisitions of the law. He thought, therefore, the order to vaccinate might be renewed, and the penalties might be repeated until the order was obeyed. Mr. Justice Mellor and Mr. Justice Hannen concurred. The judgment in this case, known as Allen *v.* Worthy, has been repeatedly questioned and always reaffirmed.

Immediately after Mr. Candlish introduced a Bill to the House of Commons to amend the law, repeating his conviction that the construction put upon the Act of '67 was never intended by Parliament, and that it was by

mere verbal accident that penalties were made continuous. The Bill was introduced too late in the session (6th July, 1870) to be carried, but it led to discussion and a promise from Government that the question would be remitted to a Committee next year, 1871.

CHAPTER XLIII.

HOUSE OF COMMONS COMMITTEE, 1871.

On 13th February, 1871, Mr. W. E. Forster moved that a Select Committee be appointed to inquire into the operation of the Vaccination Act of 1867, and to report whether such Act should be amended. Mr. Forster's remarks on the occasion are noteworthy, as manifesting the prevalent prejudice. He said—

I make the motion in compliance with a promise made to the Member for Sunderland last session, who had brought in a Bill to relax the punishment for refusal to permit Vaccination. I do not imagine that Mr. Candlish, more than any other member of the House, has the slightest doubt of the utility and necessity of Vaccination, and that it is necessary not only to encourage the practice, but to make it compulsory. Opposition to Vaccination is not heard in the House of Commons; but it is found, I am sorry to say, among certain persons in the country, who have carried their resistance to an extent that has been injurious to health and destructive to life. [Evolution this from Forster's fancy.] These people must have forgotten the state of the country before Vaccination was introduced.

Then followed the usual fabulous matter of rote—the awful mortality prior to vaccination, the reduction of that mortality by vaccination, the extraordinary immunity enjoyed by the vaccinated and revaccinated, and so forth—uttered and accepted as indisputable.

The Government do not entertain any doubt of the efficacy and advantages of Vaccination, nor of the necessity of enforcing it. They have to contend with opposition—the opposition of ignorance, and also, I am sorry to say, with the opposition arising from interested motives [What possibly could they be?] preying upon tha ignorance; and lastly, with the great neglect arising from apathy

Sir Charles Adderley opposed the appointment of the Committee. Accepting Mr. Forster's statement as valid, he demanded—

> What is there to inquire about? Inquiry that is superfluous may be mischievous. Nothing can be more dangerous than to affect doubtfulness concerning legislation as to which there is not only no doubt, but a call for more rigorous administration.

Apparently the Government were of the same mind as Sir Charles, and the Committee was conceded in fulfilment of an inadvertent pledge. Mr. Forster assured the House—

> The Government do not propose this Committee with the slightest doubt about the principle of Vaccination, or the necessity of Compulsory Vaccination; and I need not say we have no intention of relaxing the operation of the law during the deliberations of the Committee.

The Committee was nominated as follows on 16th February—

Dr. Brewer, Colchester.
Mr. Jacob Bright, Manchester.
Mr. John Candlish, Sunderland.
Mr. R. M. Carter, Leeds.
Mr. Stephen Cave, Shoreham.
Sir Smith Child, West Staffordshire.
Sir Dominic Corrigan, Dublin.
Mr. W. E. Forster, Bradford.
Mr. J. T. Hibbert, Oldham.
Mr. J. M. Holt, North-East Lancashire.
Lord Robert Montagu, Huntingdonshire.
Mr. P. H. Muntz, Birmingham.
Dr. Lyon Playfair, Edinburgh University.
Mr. W. H. Smith, Westminster.
Mr. P. A. Taylor, Leicester.

The first witness examined was Mr. Candlish, himself a member of the Committee and promoter of the inquiry. Whilst professing a limited faith in vaccination, and willing to exercise a degree of pressure sufficient to overcome mere apathy, Mr. Candlish was strongly opposed to the compulsion of parents who seriously objected to

vaccination, and especially to their persecution by repeated penalties and imprisonment.

Dr. W. J. Collins, the next witness, opened the entire question of vaccination, and by a variety of experience showed that the vaccine disease neither superseded nor mitigated smallpox, whilst it was frequently a severe ailment and the means of exciting and conveying other diseases.

Dr. C. T. Pearce followed suit. The purpose of the Committee (limited to the consideration of the compulsory law) was apparently forgotten, and Dr. Pearce delivered a comprehensive discourse, in which the history, claims, failure, fallacies, and disasters of vaccination were freely displayed; and in the cross-examination which followed made good the positions he had assumed.

Sir Jervoise Clarke Jervoise, Bart., formerly M.P. for South Hants, disputed the common notions of infection as confused with contagion, and pointed out that it was absurd to draw comparisons between the vaccinated and unvaccinated unless their pecuniary status were at the same time defined: cases of smallpox in Belgravia were not to be likened to cases in Clerkenwell. Smallpox was not mitigated by vaccination: he had two relatives vaccinated by Jenner himself who subsequently had confluent smallpox so severely that "their own father did not know them." Nor if smallpox had diminished was there any reason to ascribe it to vaccination: Jenner's cowpox had ceased out of the land, and the cause of its cessation might equally apply to smallpox.

Dr. Garth Wilkinson gave evidence with the characteristic wisdom of the physician of genius who sees with his own eyes. He showed how, endowed and lucrative, the futility and mischief of vaccination were concealed or denied, and how, considered all sufficient against smallpox, the causes of the disease were overlooked, and the introduction of improved methods of treatment were unattempted or discouraged.

Mr. George S. Gibbs contested the right of the State to inflict vaccination, or to interfere between parent and

child. Having a faculty for statistics, he had applied himself to the records of smallpox before and since the practice of vaccination, at home and abroad, and showed that smallpox was the same at present as in the past, neither more mortal nor less mortal, while there was reason to believe that vaccination was a breeder of smallpox as well as a source and excitant of other maladies.

Mr. Aaron Emery related in vigorous English how an infant of his had been vaccinated from a healthy-looking child on 31st May, 1869; how erysipelas followed; how it gradually got worse; how "the little fellow had no rest night nor day from 9th June to 4th July, when death put an end to his sufferings." Then he told the difficulty he had to obtain a true certificate of death from the vaccinator; how he forced an inquest; how a verdict was returned, "Died from erysipelas caused by vaccination"; and how its terms were subsequently altered by Coroner Lankester and registered as altered at Somerset House. Up to the time of this fatality, Mr. Emery had been an unsuspicious believer in vaccination; but his sorrow led him to acquaintance with numerous cases like his own, screened from public recognition, any artifice being accounted laudable which seemed necessary to preserve vaccination from reproach.

Mr. F. Covington, secretary of the Northampton Anti-Vaccination League, described injuries from vaccination in his family and among his acquaintance; the distrust and dislike of the practice in Northampton with widespread resistance to the compulsory law.

Mrs. E. Kemp brought her baby, and told how it had been vaccinated without examination, although there was a sore on the side of its head. As the vaccination began to take, the child's face and ears broke out, until through the mass of eruption "you could only see its little eyes."

Mr. Thomas Baker, barrister, had been engaged in the Board of Health from 1849 to 1854, and officially connected with several sanitary inquiries. In his opinion

what were called epidemics were fevers with a common origin, against which cleanliness was the efficient prophylactic, and to which his friend, Dr. Southwood Smith, held smallpox was equally amenable. As a shareholder in the Metropolitan Association for the Improvement of the Dwellings of the Industrial Classes, he knew that residents in wholesome houses, even in insanitary neighbourhoods, enjoyed remarkable exemption from epidemic maladies.

Mr. W. J. Addison testified that his perfectly healthy child had had syphilis invaccinated, and had died in consequence after horrible suffering. The facts of the case were beyond question. One hospital doctor had the temerity to ask the mother, "Whether is it not better for one in a thousand to die like this than have smallpox raging about our towns." "Possibly," replied the poor woman, "but it is strange that my child should be the thousandth."

The Rev. Wm. Hume-Rothery said his attention was first drawn to vaccination by the operation on his own child, his wife observing instinctively, "This is an unnatural and wrong thing." Investigation confirmed his wife's judgment, and he became an open opponent of the practice, writing and lecturing against it. His acquaintance with the people in Lancashire had led him to the conviction that the majority disliked and distrusted vaccination: they were coerced to its observance, and evaded it when possible. He himself was opposed to vaccination because there was nothing in nature, human nature, or revelation to justify it. This assertion of principle over and above practice led to considerable discussion as to divine law, providence, and the nature of things, and the right of conscience to withstand corporate dictation.

Mr. R. B. Gibbs, secretary of the Anti-Compulsory Vaccination League, referred to the origin of vaccination, as attested by Jenner, in the production of cowpox from the contagion of horsegrease, and subsequently to the use of horsepox, by which equination was substituted for

vaccination; the diverse virus thus derived from Jenner continuing in official arm-to-arm currency to the present day. What vaccination was had never been determined; and consequently there had been no proper basis for legislation. Nor had legislation been preceded by impartial and adequate inquiry: it had been promoted by certain medical men, supported by the press, and especially by *The Times*, the editors of which jealously suppressed all communications which impugned the efficacy of the rite. Interrogated as to the amendment of the law, Mr. Gibbs said he had no amendment to propose: the State should withdraw all assistance from the practice, and leave its use or disuse to individual discretion.

At this point the evidence of the anti-vaccinists was cut short. They had much more to produce, but enough had been heard. The Committee had forgotten its purpose, which was not to discuss vaccination, but, accepting the rite as unquestionable, to consider whether the law which enforced it was capable of amendment. Still, the mischief being done, it was thought advisable to counteract it; and forthwith contrary testimony was laid on. Various officials who for years had made the promotion of vaccination their business were summoned to the rescue, along with certain fashionable physicians, whose assurance, it was calculated, would overcome any distrust that might be excited in the public mind.

The first of the officials was Mr. John Simon, a review of whose *Papers on Vaccination* forms Chapter XL. of the present volume. Evidence from Mr. Simon relative to vaccination was of much the same order as that of a Virginian of former days on slavery, or a thriving London publican on the liquor traffic. Mr. Simon answered to the demand upon him: he was thorough: there was nothing like leather—nothing! Smallpox was among the most contagious and most fatal of pestilences, and "for an overwhelming majority of persons, well vaccinated in infancy, vaccination was a security for life against even an attack of smallpox." The unvaccinated died at the rate of 35½ per cent.; the vaccinated in general at 7

per cent.; and "the properly vaccinated" at from 1 to ½ per cent.—the fact being concealed that in times when all were unvaccinated, the smallpox death-rate ranged from 10 to 18 per cent., the same overhead death-rate of vaccinated and unvaccinated at this day. There had never been, he believed, a case of death from the direct effect of "properly performed vaccination"—the qualification, it will be observed, referring all cases of death to something other than the correct rite. He admitted there was not the least doubt that syphilis had been invaccinated on the Continent, but either from carelessness or culpable intention. Sanitation, he said, had little or no influence on smallpox: vaccination was the only protective—which variety of vaccination being judiciously left undefined. Smallpox did not displace other fevers during its prevalence, as alleged by Dr. Pearce. Holding that 97 per cent. of Londoners were vaccinated, he did not see that the epidemic then raging, the severest of the century, disproved the security asserted for vaccination.

As we read Simon's evidence, we realise afresh the possibilities of audacity operating on credulity: there is nothing that men, otherwise sane, may not believe when their disposition is set toward belief. This Committee sat in London amid a population, almost universally vaccinated, suffering from smallpox as they never had suffered within living memory; and yet in presence of such a demonstration of the impotence of the vaccine ordinance, they listened to the soothsayer with abject acquiescence! Strange as are the records of witchcraft, there is nothing in them more marvellous than this 1871 Committee of select men from the House of Commons taking for true what under their own eyes was visible as untrue—deceived and consenting to be deceived.

As for those who disputed the efficacy of vaccination, and justified their disbelief by smallpox among the vaccinated, Simon's contempt was unqualified—contempt being essential to the success of the part enacted. "Some of them were ignorant," he said, "and others dishonest."

They were a "league of persons interested in interrupting the fulfilment of the law, and very actively engaged in disseminating falsehoods against vaccination"—falsehoods in its favour actively disseminated by Simon and his trade-union being disinterested and praiseworthy.

Dr. R. Hall Bakewell, vaccinator-general for Trinidad, was somehow produced by mistake, his evidence being in several respects the reverse of what was wanted. He thought vaccination good, but that "it should be done in a more careful manner." It ought not to be compulsory, but left to the good sense of the people. Having been proved to cause death, "it was unjust to oblige a parent to submit his child to an operation attended with such risk, however rare." Referring to his experience in Trinidad, he said—

3557.—I have seen Vaccination produce inflammation of the arm and general fever lasting for several days. Such illness was often alleged as an excuse by mothers for not bringing their children for inspection on the 8th day. At first I was inclined to regard the assertion as a mere excuse, but on visiting the homes I found the children were really ill, and that it was not safe to bring them for inspection.

3563.—There is a strong opinion prevalent in Trinidad, and in the West Indies generally, that Leprosy has been introduced to the system by Vaccination. I found that medical men when they had occasion to vaccinate their own children, or those of patients in whom they were specially interested, applied to me for English lymph in order to avoid the invaccination of Leprosy, notwithstanding there was an equal, and probably a greater, chance of the English lymph being contaminated with Syphilis. I had several cases of Leprosy in which Vaccination seemed the only means of accounting for the disease.

As a consequence of this prevalent opinion, vaccination was much disliked in Trinidad, and, although by law compulsory, was indifferently enforced, so that at least half the population escaped unvaccinated.

Interrogated concerning smallpox in Trinidad, Dr. Bakewell said there had been no epidemic for fourteen or fifteen years when one occurred "frightfully severe, as are all epidemics in Trinidad, owing to the entire neglect of sanitary precautions"; adding that "the

mortality from smallpox may be greatly diminished by sanitary measures independently of vaccination." The Doctor still further ruffled the prejudices of the Committee in asserting—

3783.—I do not believe that the general mortality of the country is at all diminished by the absence of Smallpox. In Trinidad, for instance, our mortality is none the less because we have neither Smallpox, nor Whooping Cough, nor Scarlet Fever, nor Measles—the four most prolific causes of death among young children. Nevertheless infant mortality in Port of Spain is double that of London. By merely cutting off one disease from the category of diseases, you do not lessen the mortality of a country—

Precisely what Dr. Watt proved of Glasgow in 1813, and Dr. Farr at a later date confirmed; and what the comparison of the statistics of mortality in epidemic and non-epidemic years everywhere illustrates.

With the examination of Mr. Danby Palmer Fry, head of the legal department of the Poor Law Board, the Committee reverted to its proper function. Questioned as to the state of the law and the difficulties connected with its administration, Mr. Fry showed that whilst vaccination was nominally compulsory, any resolute parent might disregard it. To make vaccination really compulsory, it would be necessary to legislate for its application by force, which legislation public opinion would not tolerate. For himself, he thought that parental conviction adverse to vaccination was entitled to respect, and he therefore suggested—

3845.—That it might, perhaps, be worthy of consideration whether a man might not be exempted from the penalty who takes an oath or makes an affirmation that he has a conscientious objection to the vaccination of his child. It seems to me that this would be similar in principle to the statutes which prohibited the Ecclesiastical Courts from issuing execution against the person of a Quaker, though they might do so against his goods, on the express ground that the people called Quakers were known to entertain conscientious objections to the payment of tithes and church rates.

Sir Dominic Corrigan, M.D., a member of the Committee, next gave evidence, and the defence of vaccination

was resumed. So little did Sir Dominic apprehend the purpose of the Committee that he observed—

3992.—I think the great question before us is whether vaccine poison can contain within itself syphilitic poison or any other poison.

As to the invaccination of syphilis, he was clear: it was impossible. Vaccination induced no disease. Virus was nothing but pure lymph, even when taken from an impure subject. Vaccination was regarded with favour throughout Ireland. It was enforced, but it required no enforcement: there was no disposition to resist the law. He disliked penalties, and would rather operate by excluding the unvaccinated from schools, factories, and public employments, on the ground that "they might become a mine of disease and injure others," namely, to the vaccinated fortified against smallpox!

Smallpox had been gradually declining in Ireland under the influence of vaccination, and the disease was then, 28th April, 1871, practically extinct. Foolhardy was the assertion. Even while Sir Dominic was testifying, smallpox had reappeared: 665 died of it in 1871 and 3,248 in 1872. From 1871 to 1875 there perished 5,521 of smallpox in a land from which it was claimed vaccination had banished the disease!

Mr. James Furness Marson followed Sir Dominic—a fanatical vaccinator and promoter of compulsion. For thirty-five years surgeon of the Highgate Smallpox Hospital, he had there elaborated the whimsical notion that the efficacy of vaccination was measured by the number and character of the cicatrices; holding that—

4149.—A large number of the people in this country are very badly vaccinated, having but one cicatrix hardly perceptible, and have Smallpox as bad as if they had never been vaccinated at all.

Confronted by Mr. Jacob Bright with the fact that Dr. Gregory, of wide experience and admitted authority, had expressed the contrary opinion in his work on *Eruptive Fevers*, saying—

4670.—Hence we may learn how small importance is to be attached to the cicatrix as an evidence of the perfection or imperfec-

tion of the vaccine process. Perfect security is compatible with a small and scarcely distinguishable cicatrix or without a large wafery cicatrix at all; at least none perceptible five years after the operation—

Marson made answer—

Dr. Gregory was an authority; but he was a very singular man indeed, and had never investigated the subject in the extensive way I have.

Marson was the victim of a notion, and that a poor one, to which whatever stood in opposition was sacrificed. Among his assertions and admissions, the following are characteristic and illustrative—

4151.—If all children were properly vaccinated, the mortality from Smallpox would be less than 1 per cent. There are difficulties: there is the opposition of mothers to having their children well vaccinated.

4125.—Persons who catch Smallpox after being vaccinated do not generally have it until 18 to 25 years afterwards.

4220.—Smallpox itself is a much greater protection from Smallpox than Vaccination.

4136.—Certainly Smallpox has no tendency to die out: it is precisely the same disease it was a thousand years ago, and will be a thousand years hence.

4148.—We have no control over Smallpox: there is no specific. We have no power whatever of controlling Smallpox, Scarlatina, Measles, and other febrile eruptive affections.

4694.—I look upon hospitals as necessary evils. They are not places I would recommend the sick to go to. Anybody who can afford to keep in his house should not go to an hospital.

4327-28.—Dr. Jenner was wrong when he said Cowpox was derived from Horsegrease: it was supposed so at one time, but that is set aside now.

4325 and 4697.—I have two sources of vaccine lymph; one from the inoculation of a cow with Smallpox, and the other from a cow in the neighbourhood of Brussels which had Cowpox in the natural way.

4646.—There was no epidemic of Smallpox in London from 1796 to 1825; and as the absence of Smallpox was contemporaneous with the introduction of Vaccination, it was imagined that Vaccination had a great deal to do with it; and it was a fair conclusion.

4705.—Smallpox was raging to a great extent in the east of London before the French war broke out—

Yet it is customary to ascribe the Smallpox epidemic of 1870-71 to the Franco-German war.

The unscrupulous ferocity which animated Marson and his associates toward those who impugned their practice is forcibly displayed in the following questions and answers; premising that Simon attested of Marson that "he was a singularly careful observer"—

4174.—I suppose you are aware there is a strong feeling and a great objection on the part of a number of people against Vaccination?

Yes, I know there is; but I nearly always find that it is the father who objects and not the mother; and it makes it very suspicious.

4175.—What do you mean?

The father would like the family as small as possible that he has to work for. I am afraid that is at the bottom of it.

4176.—Do you not think that is giving credit to the father for looking much further ahead than people in that class of life generally do?

I do not think they have very far to look when they have their daily bread to earn. When the wages come in on Saturday night, it pretty often comes to their mind how the money is disposed of—

A libel as atrocious as absurd, and significant.

Dr. Alexander Wood was brought from Edinburgh to give evidence as to Scotland of much the same tenor as that of Sir Dominic Corrigan concerning Ireland. Dr. Wood's note was clear—"I do not think," he said, "that a person has a right to keep an unvaccinated child any more than to keep a mad dog." Smallpox had been prevalent in Scotland for some years, and had been made use of to pass a Compulsory Vaccination Act in 1863; but it was neither shown that prior to that Act the Scots were unvaccinated, nor that it was the unvaccinated who suffered from smallpox—apart from those conditions of life which make for smallpox. In the course of nature, smallpox abated in Scotland, and the Act had the credit of the abatement: the vaccination of the people being so complete that Dr. Wood testified—

4399.—There would not be an unvaccinated child in Scotland if we had some means of overtaking the migratory population—the railway navvies and tramps, the children born by the roadside and under hedges.

As in Ireland, there was little or no resistance to the

law; and as in Ireland, it was asserted that smallpox had been stamped out; but as in Ireland, the assumption was nullified by experience. In the epidemic of 1871-73, there died of smallpox no fewer than 5034 in Vaccinated Scotland—a contradiction unforeseen by Dr. Wood and the Committee before whom he prophesied.

Sir William Jenner appeared as court physician. He had advised Her Majesty the Queen to encourage vaccination in the case of all the members of the Royal Family, and Her Majesty had complied with his advice, and the Prince of Wales too. He had had great experience as physician to the Children's Hospital and elsewhere, and had never seen any serious illness or death result from vaccination. His testimony as to the harmlessness of the practice was unqualified, and he was "unable to conceive of any medical practitioner of standing disbelieving in it, or thinking it mischievous"; adding—

4521.—I should consider I was very much wanting in my duty, and, in fact, deserving of punishment, if I neglected to have my six children vaccinated.

He approved of the compulsory law, and wished that revaccination was likewise compulsory. As to the statistics of smallpox and vaccination, he disowned sufficient acquaintance; nevertheless he did not hesitate to assert that smallpox, as a form of zymotic disease displacing other forms, or replaced by others, was "a theory utterly without foundation." Of course testimony of this order was produced for social rather than scientific ends.

The like was true of Dr. Gull, now Sir William. He also professed to have never seen any serious illness caused by vaccination; nor did he believe that vaccination from a diseased child would communicate disease. As a defence against smallpox, he held that vaccination was as protective as smallpox itself. It was the duty of the Legislature to enforce vaccination; adding—

4830.—That with our present knowledge, I should think it the most insane thing that any human creature could think of to give up Vaccination.

He had advised the Government to accept no one for service in India without revaccination. Asked by Mr. Candlish whether he would take a child by force from its parents and vaccinate it, he replied—

4854.—I certainly would; just as I would take an ignorant child and have it educated.

Less judicious than Sir William Jenner, Dr. Gull adventured on statistics. It having been pointed out that though smallpox was then epidemic in London, the death-rate was not raised thereby, he attributed the result to vaccination. "In former times smallpox produced an enormous increase in mortality"—

4780.—I think we read of 100,000 people dying of the disease in epidemics, and I am not sure that it was not double the number. I hardly like to trust myself as to numbers, but when I was a professor of medicine at Guy's Hospital, I brought those numbers before my class, and I was astonished at the enormous number of deaths in a Smallpox epidemic. I remember that taking all the deaths which had occurred in the wars of Napoleon, they were not so many by any means as the number of lives which had been saved by Vaccination at that time. I do not remember, at the moment, the authority for that statement, but I remember that that was the kind of evidence that I had to bring before the class.

Verily the class at Guy's had romance for science, and the Committee had similar entertainment. They were told that except for vaccination the epidemic then prevalent in London would result "in a perfect pestilence"; for mortality among unvaccinated populations "had been something terrific." They had "the history of smallpox in China and India, where its effects had been perfectly depopulating." "To neglect or discourage vaccination in their crowded English towns would be much the same as thrusting a fire-brand into a powder magazine." Before the introduction of vaccination, "France lost year after year a quarter of a million of inhabitants (250,000) by smallpox"; and so forth and so forth; assertions without warrant outside the intention to excite fear in order to obtain confidence.

The next witness was Dr. Charles West, for twenty years physician to the Hospital for Children, London,

where children under two years old were not received—at ages when the immediate effects of vaccination are obliterated or forgotten. Vaccination, in his opinion, prevented or mitigated smallpox. "It had, no doubt, the effect in many cases of developing a disposition to some forms of skin disease, especially eczema;" but on the whole it was not injurious. In the course of his immense experience he had only known of one child whose death was due to erysipelas caused by vaccination. He had no proof of the invaccination of syphilis.

There was nothing peculiar about Dr. West's evidence. It was according to professional orthodoxy, from which it would have required more than ordinary courage to depart. Medical men by the gross could have been put up to deliver similar evidence; but what was it worth? The medical mind is fixed in two directions; first, that vaccination prevents smallpox, or mitigates it; and second, that it induces a harmless disease; a couple of conclusions that it seems possible to maintain in presence of a vast array of evidence to the contrary.

If any one chooses to assert that vaccination prevents smallpox or mitigates it, How can he be confuted? The prevented smallpox is hid in the unknown, likewise the severity that has been mitigated. Again, if vaccination be held harmless, any instance of its ill effects can be resolved into coincidence with a sneer at the vulgar fallacy of converting *post hoc* into *propter hoc*. Possessed with these notions, nothing is easier than to assert with Dr. Stevens, for example, "No man has seen more of vaccination than I have, but I have yet to see any bad effect from the practice." None are so blind as those whose business it is not to see; or as Mr. Aubrey De Vere has it, "Prejudice, which sees what it pleases, cannot see what is plain." It is, I contend, plainly impossible to inflict a disease like *Vaccinia*, in any of its varieties, without injury to the extent of the disease; without intensifying active or exciting latent disease; or without the risk of conveying other inoculable disease from the vaccinifer.

"The great question before the Committee," said Sir Dominic Corrigan, "is whether vaccine poison can contain within itself syphilitic or any other poison"—the great terror being syphilitic poison. That question the next witness, Mr. Jonathan Hutchinson, an expert in syphilis, determined. He had been called to examine thirteen persons, mostly young adults, engaged in a London shop, who had been revaccinated by order of their employer during the prevalent smallpox panic. The vaccinifer was "a fine, full-grown, healthy child," yet it conveyed syphilis, beyond mistake, to 11 of the 13 vaccinated. Mr. Hutchinson allowed that the vaccinator was not to be blamed for the disaster, saying—

5032.—I very much doubt whether it could have been avoided by inspection. The child looked healthy, and it had passed at the Vaccine Station as healthy.

Having similar cases within his experience, and convinced "that syphilis *can* be communicated in the act of vaccination," Mr. Hutchinson was asked by Mr. Candlish whether he was aware that the medical profession in general denied the possibility, he replied—

5060.—I am not aware that the authorities on the subject deny it; I believe that several of them hold it very clearly; I am aware that the general opinion of the profession is perhaps opposed to it, but not the opinion of those who have carefully investigated the question.

To reduce the effect of testimony so injurious to vaccination, it was attempted to make out that the danger was limited to virus tainted with blood; and although Mr. Hutchinson conceded that blood *might* be the medium of transmission, it was undecided.

5073.—It is not a subject on which I should like to infer anything; I should like to have experiments and facts.

Subsequent experience has shown that with blood or without blood, syphilis may be invaccinated. Still, Mr. Hutchinson, as an advocate of vaccination, and of its compulsory infliction, "considering it of the utmost necessity and importance," conceded that the risk was

infinitesimal; but (as was remarked at the time) unless the diffusion of syphilis were infinitesimal, there was no ground for the assumption of an infinitesimal risk. As Mr. Hutchinson admitted—

5089.—I believe there are cases of latent Syphilis which cannot be detected by any medical man, unless he examines into the history of the child as well as its appearance.

Mr. James Neighbour, vaccination officer of St. Luke's, Middlesex, a district of 60,000 inhabitants, chiefly poor, described the operation of the Vaccination Acts. He met with little resistance to the law; the births were vaccinated up to the registration point, but he had no check on those who might neglect or evade registration, or leave or settle in St. Luke's.

Dr. E. C. Seaton, as select representative of the official vaccine ring, was reserved for the consummation of the inquiry. To review his evidence, delivered with much elaboration, would be to repeat much of our story. Vaccination was afresh set forth as "a perfectly safe and efficient prophylactic against smallpox, which might be as reasonably disputed as the demonstrations of Euclid." Nevertheless, the perfectly safe and efficient variety of vaccination was neither defined by the witness, nor demanded by the Committee—whether with horsegrease cowpox, cowpox, horsepox, or smallpox cowpox; an omission that illustrates the slovenly and credulous habit of those concerned—a 19th century miracle and mystery, being under discussion, and matter and mode being taken for granted under cover of a word!

Throughout Seaton's evidence, smallpox was treated as an isolated disease, which might be dealt with specifically and exterminated without reference to other fevers, the common mortality being reduced to the extent of its reduction: no relation being recognised between fever and fever, epidemic and epidemic—

5344.—Epidemics of Smallpox, like epidemics of other diseases, come and go according to laws which we have not made out. They vary in their intensity, and vary in their power of diffusion. I have no explanation to offer why the present epidemic (1871) should

be so much more intense than the epidemic of 1863, any more than I can tell why the epidemic of 1863 should have been more severe than the subsequent epidemic of 1866-67; or why one Cholera or Scarlet Fever epidemic should be so much more fatal than another Cholera or Scarlet Fever epidemic—

Yet when explanation was offered, namely, that the febrile disease of a community is a measure of its sanitary aberrations; that whilst the forms of fevers may vary, the activity of one form is balanced by the quiescence of others, the tale of death being equal—the explanation was waved aside; and why? Because it did not make for the glory of vaccination!

Curiously, and for a different reason, Malthus argued, as we now argue, that if vaccination could exterminate smallpox, not a life would be saved—supposing, let us add, no change effected in the conditions out of which smallpox and cognate maladies arise. Thus Malthus wrote—

I am far from doubting that millions of human beings have been destroyed by Smallpox; but were its devastations, as Dr. Haygarth supposes, many times greater than the Plague, I should still doubt whether the average population of the earth had been diminished by them by a single unit. Smallpox is certainly one of the channels, and a very broad one, which Nature has opened for the last thousand years to keep down population; but had this been closed others would have become wider, or new ones would have been formed. For my own part I feel not the slightest doubt, that, if the introduction of Cowpox should extirpate Smallpox, we shall find a very perceptible difference in the increased mortality of some other diseases.*

Like Simon and Marson, Seaton had his insult for the opponents of Smallpox. Simon charged them with ignorance and dishonesty; and Marson, with the desire to have their families reduced by smallpox. Seaton held that they enjoyed martyrdom and courted imprisonment, in order to get silver watches from their admirers on their release! Here imputation was self-revelation. Seaton had won place and pay by his promotion of State vaccination; and absurdly ascribed to his antagonists his own

* *Essay on the Principle of Population.* 2nd Ed. London, 1803.

venality. Indeed, his evidence throughout was pervaded by the temper and tactics of the quack, with an end to promote *per fas et nefas*. Asked what would happen if compulsion were withdrawn from vaccination, he answered—

5510.—Simply an awful increase in the mortality from Smallpox, and a considerable increase therefore in the amount of mortality in the kingdom.

The typical answer of the quack when his dupe hesitates over his prescription is, "You'll see then what will happen!" When vaccination was not compulsory prior to 1853, nothing "awful" happened; it had been compulsory for fourteen years in 1871, and yet in 1871 the kingdom was under experience of the severest smallpox epidemic of the century! Nevertheless, the anticipation of Malthus was fulfilled: there was no proof that the average mortality was increased by a single unit.

The evidence concluded, a draft report was drawn up by the medical officials, submitted to the Committee, and, after some trivial alterations, agreed to. The character of the report may be estimated from this its second article—

That Cowpox affords, if not an absolute, yet a very great protection against an attack of Smallpox; and *an almost absolute protection against death from that disease*—

And this in face of the fact that deaths from smallpox among the vaccinated and revaccinated were recorded by thousands!

Against the evidence in favour of vaccination, the prevalence of the present (1871) smallpox epidemic, especially in London, was alleged, and the awkward circumstance was thus tried to be evaded—

Your Committee, however, believe that, on the one hand, if Vaccination had not been general, this epidemic might have become a pestilence as destructive as Smallpox has often been where the population has been unprotected; and that, on the other hand, if this preventive had been universal, the epidemic could not have approached its present extent.

There is no arguing against what might have been. When Sangrado's patients died, he averred that if only they had been bled more and taken more water, they would indisputably have recovered ; and Sangrado had believers. So when vaccination does not save from small-pox, we are assured, "Ah, but it would, if only there had been more of it." Descending from fancy to experience, —from what *might have been* to what *has been*, there is no record of a worse epidemic in England than that of 1871-72. The only one to compare with it was the epidemic of 1838-40, which occurred when not 50 per cent. of the English were vaccinated; but they fared no worse than in 1871-72, when the number of vaccinated was doubled.

The proper business of the Committee lay in legislation, and their report thereon took this form—

There appear to have been several cases of infliction of more than one fine or imprisonment in regard to the same child; and your Committee, though by no means admitting the right of the parent to expose his child or his neighbour's to the risk of Smallpox, must express great doubt whether the object of the law is gained by thus continuing a long contest with the convictions of the parent.

The public opinion of the neighbourhood may sympathise with a parent thus prosecuted, and may in consequence be excited against the law; and after all, though the parent be fined or imprisoned, the child may remain unvaccinated. In such a case the law can only triumph by the forcible Vaccination of the child.

In enactments of this nature, when the State, in attempting to fulfil the duty, finds it necessary to disregard the wish of the parent, it is most important to secure the support of public opinion ; and, as your Committee cannot recommend that a policeman should be empowered to take a baby from its mother to the Vaccine Station—a measure which could only be justified by an extreme necessity, they would recommend that, whenever in any case two penalties, or one full penalty (20s.), have been imposed upon a parent, the magistrate should not impose any further penalty in respect of the same child.

It has been suggested that the parent's declaration of belief that Vaccination is injurious might be pleaded against any penalty, but your Committee believe that if the law were thus changed it would become a dead letter, prosecutions would soon cease, and the children of the many apathetic and neglectful parents would be left unvaccinated, as well as the children of the few opponents of Vaccination.

The recommendations of the Committee, chiefly administrative, were embodied in a Bill, passed by the House of Commons on 15th August. The tenth clause, limiting penalties, was the subject of a short debate, and was carried on a division by 57 to 12. When the Bill was brought before the House of Lords on 18th August, Lord Redesdale moved to omit clause 10, saying—

The clause exempts persons who have been fined the full penalty, or two penalties of any amount, from any further proceedings. The clause has been hailed with triumph by the opponents of Vaccination, who justly think it destroys the whole effect of the compulsory law. The poor will naturally argue that, if the rich are let off with a fine of 20s., the penalty ought in their case to be reduced; and such a resistance to the measure will spring up, that the whole purpose of the former Acts will be done away.

Viscount Halifax replied—

I hope the House will not strike out the clause, as it might entail the loss of the Bill. I admit there are objections to its principle; but it has been unanimously recommended by a Committee of the House of Commons. Determined opposition has been offered to Vaccination by a limited number of persons on grounds which I deem unreasonable; but, nevertheless, whilst this feeling exists, it is the opinion of Mr. Simon, the medical officer to the Privy Council, that it is unwise to insist upon anything which is not indispensable; and, further, that the penalty now proposed will answer all the practical purposes of the Act. It is desirable that public feeling should go with the Act, which will be the case, since the exceptions will be very few; whereas an adverse feeling may be excited to the prejudice of the Act, if even a few prosecutions are persisted in. The strongest advocates of Vaccination deprecate repeated fines and imprisonments, which leave the defendants' children unvaccinated.

Lord Redesdale rejoined—

I presume the noble Viscount thinks it useless to fine a man more than once for drunkenness? The clause surrenders the whole principle of Compulsory Vaccination.

On the question whether the clause should stand part of the Bill, their Lordships divided:—Contents 7; Noncontents, 8; Majority, 1. Resolved in the negative.

On the 19th August the House of Commons considered the Lords' amendment, when Mr. W. E. Forster observed—

The House of Lords has struck out of the Bill the 10th Clause, the important clause which mitigates penalties. That clause was

passed in this House by a majority of 57 to 12, and expunged in the other House by a majority of 8 to 7, the total number of peers voting being just equal to the number of members of the Select Committee which, after long and careful consideration, came to a unanimous conclusion in favour of the clause. I should have no hesitation in asking the House to disagree to the amendment, if the period of the session would allow of such disagreement being made without loss of the Bill; but as that is not the case, and as such a course may involve the loss of the Bill, which effects several great improvements, I fear the House has no choice, and must accept the amendment. Although the clause is doubtless an important one, I may remark it is not necessary to other parts of the Bill, and, with Smallpox raging in the country as it is, I think it will not be safe to postpone the measure. I regret the omission of the clause, because in my opinion it strikes a heavy blow at the principle of Compulsory Vaccination, which their Lordships, as well as I, think necessary for the health of the country. I move that the House agree to the Lords' amendment.

Mr. M'Laren said—

Whilst I concur in the course proposed, I hope the Government may lose no time in bringing in a Bill to enact the clause that is dropped.

The motion was agreed to, and repeated penalties continue to this day.

CHAPTER XLIV.

THE STRUGGLE FOR FREEDOM.

THE temper and conduct of Parliament satisfied Mr. Gibbs and his associates that they must turn again to the people and achieve success through their instruction, enlightenment and fears. At this juncture, however, the labours of Mr. Gibbs terminated. He had married Miss Griffiths (for many years secretary of the Ladies' Sanitary Association), and had gone with her on a tour through the United Kingdom, holding meetings and discussing the evidence and report of the House of Commons Committee. His last public appearance was

at Cork; proceeding thence to Dublin, he died there after a short illness on 1st December, 1871.

The removal of Mr. Gibbs was a severe discouragement; but a good cause may always be trusted to evolve its own prophets. Mrs. Gibbs, as became a wise woman, felt that she could not better honour her husband than by consecrating herself to his work. She formed the Mother's Anti-Compulsory Vaccination League; and until her own death, 10th November, 1878, devoted her training, experience and intelligence to awakening an interest in those divine laws of life of which a practice like vaccination is a deliberate negation.

In 1872 Mr. John Pickering, of Leeds, in conjunction with Mr. Henry Pitman, started the *The Anti-Vaccinator* fortnightly, and continued it for a year. To maintain such a journal is far from easy. As Napoleon III. observed to Cobden, "There are a good many free-traders in France, but you must remember that the people are not organised, whilst the trades which prey upon the people are organised and are always alert." To overthrow the trade in vaccination, established, endowed and enforced, is to encounter the enmity and opposition of the organised profession at whose instigation and for whose advantage vaccination was established, endowed and enforced; and to effect the overthrow, it is necessary to raise up a countervailing force among a public apathetic, ignorant, and credulous as to medical mysteries. The overthrow might be thought hopeless were it not for the leverage afforded by the compulsory law. Every parent who has wisdom and love enough to refuse to have his child vaccinated, is enabled to bear his testimony in court, to have it certified by fine or imprisonment, and to have his triumph published for encouragement and repetition. There is no preaching like such practice, for which the evil law itself provides opportunity.

Mr. Pickering was fined over and over again, and in his *Anti-Vaccinator* he proved abundantly that he had reason and science without end for his steadfast resistance to the legalised superstition. In 1876 he was

enabled to strike a blow for the truth not likely to be forgotten, especially in Yorkshire. The statistics of the Leeds Smallpox Hospital had been published after the fashion of similar concoctions—an insignificant mortality among the vaccinated being set against a prodigious mortality among the unvaccinated. The statistics were denounced as fictitious, and proof of the accusation being demanded, Mr. Pickering produced the proof.* The requisite inquiry was tedious and difficult; and because tedious and difficult it was presumed it would never be attempted, and that impunity was assured. The exposure demonstrated afresh how little dependence is to be placed on the collocation of figures by those whose pride and interest are committed to a foregone conclusion.

The severity of the compulsory law is subject to frequent abatement in its administration by poor law guardians. They appoint and pay vaccination officers, and it is for them to consider and to sanction repeated prosecutions. Hence a majority, or an energetic minority of guardians adverse to vaccination may do much to frustrate its public administration. What is practicable in this way was shown by the Keighley guardians in 1876. They declined to prosecute; they disregarded the admonitions of the Local Government Board; and they refused to obey a mandamus issued from the Queen's Bench. They were thereon arrested for contempt of court, and committed to York Castle, from which they were released after nominal submission. They were re-elected by the ratepayers, and did as before, but more discreetly.

There is a proverb about taking a horse to the water and trying to make him drink, which applies to legislation when equally disliked by those expected to enforce it and by those on whom it is to be enforced. Under such conditions the compulsory act is of no effect in Keighley: those who like may be vaccinated, and those who do not, need not. The majority are unvaccinated

* *The Statistics of the Medical Officers to the Leeds Smallpox Hospital Exposed and Refuted in a Letter to the Leeds Board of Guardians.* By John Pickering. Leeds, 1876.

and nowhere is smallpox less feared. In several towns where public sentiment is similarly enlightened, something of the same freedom is enjoyed. In many parishes it is the rule to disallow repeated prosecutions: the vaccination officer fulfils his commission in prosecuting once, and then his hand is stayed. In some parishes those who are known to be opposed to vaccination are passed over on the tacit understanding that they keep quiet as to their indulgence; a course of procedure extremely injurious to the good cause, damping enthusiasm and suppressing that conflict and agitation by which it prospers. In other parishes no quarter is allowed: the law is worked with rigour. Prosecution follows prosecution until either fury exhausts itself, or the nonconformist is driven elsewhere.

Such persistent prosecution often becomes a public scandal. To a parent with adequate means, the fines and costs are trivial, and are amply repaid by the satisfaction of setting guardians and justices at defiance, and publishing far and wide his contempt for the vaccine superstition. On the other hand, a parent in humble circumstances is often put to cruel straits between his love and duty to his child and the comfort of conformity.

In the difficulty thus created by the law, the Local Government Board is frequently appealed to for advice; and in 1876 the Board, at that time under the presidency of Mr. Sclater-Booth, addressed a letter of counsel to the Evesham guardians, which, translated from official circumlocution, came to this — Prosecute until you are satisfied your antagonist cannot be overcome: then consider whether you had not better desist; for he may obtain sympathy, and the law and the rite alike suffer discredit in public estimation. In Cowper's words, "Safe policy, but hateful." This Evesham letter has become a standard document, and is regularly posted by the Board to guardians in perplexity as to the extent of vengeance they should execute. Such is the variety of valour taught from Whitehall—"Fight until you discover you are not likely to prevail; and take care to leave off before

you make yourselves hateful or ridiculous." Law was never, perhaps, reduced to baser terms.

Several attempts have been made to modify the law as recommended by the Vaccination Committee of 1871 and approved by the House of Commons. Mr. Pease (now Sir Joseph) introduced a bill with that purpose in 1872 and 1878, limiting the penalty in any case to 20s., but without success. In 1880 the Gladstone administration, fresh from the country, and flushed with good intentions, brought forward a similar bill, but dropped it in abject fright in consequence of the clamour of the medical trade unions, who fancied their vested interest in vaccination endangered. Nevertheless, those responsible for the law at the Local Government Board avow their disapprobation of repeated prosecutions, and regret that Parliament does not appear to be of a like mind, reckless of the fact that Parliament is rarely unwilling to consent to an administrative change when those in authority state the reasons for it, and insist on the necessity of giving them effect.

Mr. Forster, when moving for the Committee of 1871 in the House of Commons, spoke as if no member was prepared to dispute the efficacy of vaccination against smallpox; and, though the assumption was excessive, it was not far from correct. Even Mr. Candlish only objected to the injustice of compulsion. Since then considerable progress has been made. Mr. P. A. Taylor, who shared the position of Mr. Candlish, subsequently examined the history and evidences of vaccination for himself, with the inevitable result: he discovered that he had been imposed upon, and having made sure, straightway began to make known his discovery to others. Mr. C. H. Hopwood, equally enlightened, moved Parliament for various statistical returns which exhibited the influence of enforced vaccination, in authentic form and on a national scale, as a factor of death and a communicator and aggravator of other maladies. In conjunction, Mr. Taylor and Mr. Hopwood have raised the standard of resistance to vaccination in the House of Commons; and

what Mr. Forster in 1871 set forth as indisputable, is now openly and unanswerably disputed; for those who have come to the defence, like Sir Lyon Playfair and Sir Charles Dilke, have been convicted of unquestionable mis-statements which could only pass muster as addressed to uncritical credulity.

Parliament is the creature of public opinion, and to arouse and inform that opinion and to bring it to fruit in legislation, it is necessary to agitate and to organise. Consequent on the death of Mr. R. B. Gibbs in 1871, the League, of which he was leader, underwent a course of vicissitude until, in 1876, it was revived under the presidency of Mr. William Hume-Rothery, with the *National Anti-Compulsory Vaccination Reporter* for its organ, edited by Mrs. Hume-Rothery. The energy and ability which Mr. and Mrs. Hume-Rothery have brought to their arduous enterprise have been unwearied and conspicuous—their self-consecration has been unreserved. Sometimes they have been charged with vehemence and intolerance, but when we consider the craft with which they are confronted on one side, and the credulity on the other, the misery and mortality resulting from the cruel practice, and the monstrous oppression exercised on those who resist the despicable superstition, it is not easy to be calm, or to adjust invective to a scruple. "Thou shouldst not speak so strongly, John," said a Friend to her husband, when denouncing some iniquity. "Ah! Jane," he replied, "thou knowest not what I keep back."

It is frequently said that anti-vaccinators are fanatical, which may be more or less true; but if in quest of fanaticism, where shall we find it so ruthless, so untruthful, or so mercenary as among vaccinators? Take for example, Jenner, or Ring, or Seaton, or Marson, or Simon. The fury of anti-vaccinators stands excused by the strongest reason that can justify or ennoble fury. If a father has a child injured or killed by vaccination, and is threatened (as is often the case) with a second attack on his family life, with what temper may he be expected

to regard the law? When Macduff's children were slaughtered, it was only in Macbeth's blood that he could ease his soul, and with Macduff goes the sympathy of every human heart. So it is with those bereaved by vaccination; only for them there is no personal Macbeth to receive his deserts, but a bodiless law.

It is not difficult to philosophise over other people's wrongs, or advise forbearance where there is no sense of hurt; but fury and indignation constitute the natural reaction against outrage and injustice, and where feeble or absent denote defective moral sensibility. Nevertheless, fury and indignation are poorly spent if allowed to exhaust themselves in vituperation. Their proper use is to give vigour to action, and, invested in prudence, to achieve swift and sure redemption. Wise is the advice—

> "Prune thou thy words, the thoughts control
> That o'er thee swell and throng:
> They will condense within thy soul,
> And change to purpose strong."

The National League holds an annual conference in some convenient centre, to which representatives from affiliated societies are appointed. Many of these societies co-operate for the defence of their members under prosecution; they organise public meetings and discussions; provide lectures; distribute tracts; bring to light vaccination disasters; frustrate the attempts of medical men to get up smallpox panics; and, in short, to do all in their power to turn confidence aside from a magical, misleading and mischievous prescription to trust in the common conditions of health, as verified by science and continual experience.

It is needless to say that these societies excite much annoyance and evoke much bad language from the practitioners whose craft they discredit and despoil. Thus, for example, the British Medical Association, in a petition addressed to Government in 1879, protesting against any relaxation of the compulsory law, and signed by several thousand members of the profession, gave voice to the trade grievance—

The outcry against Compulsory Vaccination is mainly due to certain interested persons [*interested in what?*] who, by the dissemination of inflammatory literature and distorted statements, stir up opposition to Vaccination on the part of ignorant and thoughtless people.

Here what is wished to be taken for true is set forth as fact. Whatever the opponents of vaccination may be, they are neither ignorant or thoughtless, nor do they influence the ignorant and thoughtless. On the contrary, it is their exact acquaintance with the history and theories, the inutility and dangers of the multiform rite, designated vaccination, which renders them such dangerous and disagreeable antagonists. Further be it said, compulsory acquaintance with vaccination has been for thousands an introduction to vigorous intellectual life. It has demonstrated the fallibility of authority, and how it is possible for what is accounted established beyond dispute to be false to the core. Certain it is that ere long vaccination will be ranked among the crassest of human follies, and what force that exposure will lend to scepticism in conflict with other forms of conventional opinion, may be left to the consideration of the judicious reader.

The London Society for the Abolition of Compulsory Vaccination was formed in 1880 with objects thus defined—

1.—The Abolition of Compulsory Vaccination.

2.—The Diffusion of Knowledge concerning Vaccination.

3.—The Maintenance of an Office in London for the Publication of Literature relating to Vaccination, and as a Centre of Action and Information.

An office was opened in Victoria Street, Westminster, with Mr. William Young, as secretary, and *The Vaccination Inquirer*, established by Mr. William Tebb in 1879, was adopted as the organ of the Society. The executive committee, liberally assisted by the Countess de Noailles, Mr. P. A. Taylor, Mr. Tebb, and others, have been enabled to make many and visible marks on public opinion, which by all means possible they are ever intent

to repeat. Mr. J. G. Talbot, M.P. for Oxford University, took early opportunity to stigmatise the London Society as a Murder League, and Dr. Barrow, president of the British Medical Association in 1881, as "a Disgrace to Humanity"—these and similar amenities being taken as badges of honour and tokens of success. The London Society has also actively co-operated in successive International Anti-Vaccination Congresses—at Paris in 1880, at Cologne in 1881, and at Berne in 1883.

Of late years the literature of anti-vaccination has been steadily increasing in volume, variety and power. A notable effort to bring the question within range of common apprehension was the publication in 1876 of *Our Medicine Men*, by Mr. H. Strickland Constable. Apart from vaccination, *Our Medicine Men* is a pleasant book, full of anecdote, good humour, shrewdness and excellent philosophy, not likely to be forgotten by those who make its acquaintance.*

A series of *Vaccination Tracts*,† fourteen in number, was commenced by Mr. Wm. Young in 1877 and completed by Dr. Garth Wilkinson in 1879. Fuseli, reproaching his contemporaries for their indifference to Flaxman, said, "You English, you see with your ears"; and Fuseli's observation recurs as we think of the limited repute of Dr. Wilkinson; not that any more than Flaxman he is unknown, but because he is so *inadequately* known, probably because he is so frequently at variance with the fashionable science of the day, nor has paid court to its fashionable professors. Nevertheless, those who have sense and courage to recognise what is admirable without direction find in these *Tracts* not only vaccination made an end of, but thoughts new and deep, with

* Mr. Constable's publications have been as follows—
Medical Evidence in the Case of Dale v. *Constable*. York, 1872. Pp. 30.
Doctors, Vaccination, and Utilitarianism. York, 1873. Pp. 239.
Our Medicine Men: a Few Hints. Hull, 1876. Pp. 689.
Fashions of the Day in Medicine and Science. Hull, 1879. Pp. 300.

† *Vaccination Tracts with Preface and Supplement*. London, 1879. Pp. 348.

felicities of diction and cadence that every connoisseur in words must appreciate and revert to with delight. However wide our acquaintance with English literature, a variety of singular affluence and originality remains until Dr. Garth Wilkinson has been discovered.

It is a mistake to suppose that all medical men believe in vaccination in one or any of its varieties. Those who use their eyes and are not bewitched by prescription or self-interest, recognise the failure and disasters of the practice, but may not care to set themselves at open variance with their profession. Many privately confess their vanishing or vanished faith in the rite, adding, perhaps, that its dangers are exaggerated, and that it does little harm with due precaution, whilst affording a comfortable sense of security to its recipients. Others go further, and wish the discredit of compulsion were removed from the practice, when they would leave it to their patients to decide for themselves to vaccinate or not to vaccinate, they disowning responsibility. A nobler few decline to hold any terms of compromise with the imposture, and among these Mr. Enoch Robinson is conspicuous. He has lectured and debated against vaccination, and by his temperate and competent advocacy has made converts of the most unwilling and prejudiced. Moved by a popular compilation in defence of vaccination, he published a reply to it in 1880, entitled, *Can Disease protect Health?**—a polemic cogent and perspicuous, and ingenuous as its opposite was the reverse. As illustrative of the character of the medical press, it may be mentioned that advertisements of Mr. Robinson's pamphlet were declined by *The Lancet* and *The British Medical Journal*, it being their rule to exclude announcements injurious to the interests involved in vaccination—surely in such quarters a superfluous precaution. Some people appear to fancy that intolerance is a peculium of theologians; but they would find abundant cause for a different opinion if familiar with the medical world.

* *Can Disease protect Health? being a Reply to Mr. Ernest Hart's pamphlet, entitled The Truth about Vaccination.* By Enoch Robinson, M.R.C.S. London, 1880. Pp. 38.

It is said that inasmuch as the rising generation of medical men are more roundly educated than their predecessors, they are likely to deal with vaccination in a more scientific and independent spirit. The experience of Dr. W. J. Collins at St. Bartholomew's Hospital lends reason to the anticipation. Study and observation confirmed Dr. Collins in his father's practical judgment, which he has re-stated firmly and temperately on proper occasions; supporting it with the wide and open evidence at his command. He has been heard with patience and favour, nor has he encountered any but honourable opposition; proving how much depends on the manner in which a man fights his battle, and how much is conceded to courage with courtesy. Dr. Collins has argued, "Ought Vaccination to be enforced?" before the Abernethian Society; he has met Dr. W. B. Carpenter in public debate; he has discussed the Vaccination Disaster at Norwich in 1882; he has answered Sir Lyon Playfair; and he has brought the doctrine of evolution to bear on the generation of disease.* If sometimes we refer to the medical profession with severity, the recollection of members like Dr. Collins operates as a check. Still we must be just. Professions, like kindred trade unions, are controlled by their interests, and there never was church, or community, or corporation which surrendered any source of gain, save by external compulsion. Public vaccination in England represents a medical endowment of £100,000 annually, which the profession, true to the law of its being, cannot renounce voluntarily; and there is no sense in shutting our eyes to that certainty. Of course, it would be absurd to charge medical men individually with defending vaccination because of the gain attached thereto: nothing of the kind is intended: but as Hobbes observed of mankind in the gross, "Even the axioms of geometry would be disputed if their interests were peculiarly affected by them."

* *A Review of the Norwich Vaccination Inquiry.* London, 1883. *Sir Lyon Playfair's Logic.* London, 1883. *Specificity and Evolution in Disease.* By W. J. Collins, M.D., B.S., B.Sc. (Lond.) London, 1884.

When, therefore, it is said that vaccination is a medical question which may be left to medical men to settle, the answer is—"Nay: vaccination is paid for out of the public pocket, and whatever the evidence adverse to its usefulness, it will be upheld as beneficial by those who profit by it. If those who pay do not object, those who are paid never will. In face of common experience, we hold it cannot be otherwise."

There are fashions in medicine as in millinery: they are started; they flourish; they pass away; but the permanence of any medical fashion might be secured if fortified by endowment. Venesection was once in vogue; now it is scarcely known; but if in its heyday a law had been passed for its performance at the public expense, a ring of official venesectors would have been created to justify the practice against all gainsayers; to deny or explain away every disaster and fatality; and at all hazards preserve its credit from reproach; whilst it would cost something like a constitutional struggle for the nation to escape from the imposition. It is thus with vaccination. Left to itself, it would, like venesection, have dropped into disuse; but it acquired permanence from the initial error—the endowment of the National Vaccine Establishment in 1808.

The enforcement of vaccination supplies a yet stronger reason for public interference. A church endowed by the State might be endured by Dissenters, but if submission to any of its offices were made compulsory, endurance would give place to active resistance. Such is the case with vaccination. As it is endowed and enforced, it is hopeless to try to reserve it from general discussion and denunciation. Since citizens are liable to fine and imprisonment who withhold their children from the lancet, it becomes their duty to satisfy themselves as to the character of the operation for which they are taxed, and with which their families are menaced; and should their convictions be adverse to its utility and safety, they cannot do their fellow-citizens better service than by bearing the testimony of open resistance.

Thus vaccination is translated to politics and made every man's business; whilst the interest created by its endowment and enforcement deprives its medical advocates of judicial authority in the controversy. It would be as reasonable to expect slaveholders to denounce slavery, or protected manufacturers to advocate free trade as for those whose professional prestige and advantage are involved in the practice to speak the truth about vaccination. Let us be reasonable. Do men gather grapes of thorns, or figs of thistles? We should not require of average human nature the virtue of its rarer forms. Like all monopolies, vaccination endowed and enforced, is defended with unanimity from within, and must be attacked and overthrown from without—nevertheless be it said with *some* assistance from within, and that assistance most efficient.

It is therefore no cause for surprise that a large share in the agitation against compulsory vaccination has fallen to laymen. Mr. George S. Gibbs (cousin of John Gibbs and brother of R. B. Gibbs) has for thirty years maintained a criticism, chiefly statistical, of the official defences of vaccination, characterised throughout by an accuracy which has never been impugned.*

Mr. H. D. Dudgeon has been described as "a veritable and venerable apostle of health." With a consummate knowledge of hygiene, and a profound faith in its power to overcome zymotic disease, he has set forth its principles with such lucidity and persistency that he has gone far to educate Leicester in setting at naught the vaccine superstition. To the standard assertion of the vaccinators, that sanitation is good against all febrile affections, except smallpox, for which there is no preventive save vaccination (the sovereign variety being conveniently undefined) he has been an opponent merciless as truth. Regret is frequently expressed that the abundant information and admirable sense which pervade

* The first publication of Mr. Gibbs, *The Evils of Vaccination*, is dated 1856: the latest is a reply to the question, "Is Vaccination Scientific?" in *The Journal of Science*, March, 1884.

Mr. Dudgeon's writing have been confined to newspapers and occasional pamphlets, but it is probable his teaching has been all the more fruitful because adapted to immediate circumstances.* The word spoken in due season how good it is!

The name of Mr. Alexander Wheeler of Darlington is familiar wherever vaccination is brought under discussion. Mr. Wheeler's interest in the subject was first excited, he writes, by Mr. G. S. Gibbs, "whose scepticism as to its virtue seemed to me absurd"—

> Mr. Gibbs inquired whether I had examined the question, and when I confessed that I had not, he asked if I would read Baron's *Life of Dr. Jenner*. Nothing loath, I accepted the loan of the volumes. Doubts began to trouble me with the first volume, and the second quite upset my confidence in Vaccination as a positive preventive of Smallpox. I then set to work to ascertain with what care I could, whether there was any truth in the assertion that Vaccination diminished Smallpox or modified its virulence. The process of determination was not rapid, but long before I had formed a definite opinion, I was satisfied that *Compulsory* Vaccination was indefensible; and my first efforts were directed to the protection of my own children from the infliction. Unsatisfied as to what Vaccination was, or what the Vaccinator effected, I clearly saw that the State had no right to enforce a practice by no means harmless, nor preventive of Smallpox, nor easy to explain the use of.

As lecturer, debater and newspaper controversialist, Mr. Wheeler has acquired well-earned distinction. Knowing far more of vaccination, its history, varieties, consequences, and statistics than his adversaries, they are usually overthrown with a dexterity realised as horrible and astonishing. Like savages with bows and arrows, they come forth in the innocence of faith to encounter arms of precision. In 1878 Mr. Wheeler held a debate with Dr. George Wyld, an enthusiastic advocate of the cowpox discarded by Jenner as impotent against smallpox. Sir Thomas Chambers presided, and the

* An article, "Compulsory Vaccination," in evidence of Mr. Dudgeon's quality, will be found in *The Westminster Review*, No. CXXX., April, 1884.

question discussed being, "Is Vaccination worthy of National Support?" How rash and how futile was Dr. Wyld's championship is recorded in the report of the debate.*

Mr. William Tebb is another well-known name in connection with the movement against vaccination. For a time dubious, his attention was quickened and his course decided by the summons of the St. Pancras guardians to have his daughter, Beatrice, vaccinated. His refusal was followed by prosecution after prosecution in the Marylebone police-court, until at last the guardians gave up the contest as hopeless.† It was a bad day for vaccination when the compulsory law was applied to Mr. Tebb. As with many others, persecution made of him an inflexible and active antagonist. His tongue, his pen, and his purse, coupled with untiring industry and eminent executive ability, have been devoted to the exposure and overthrow of the conjoint superstition and tyranny. Mr. Tebb is a fine exemplification of Sir T. Fowell Buxton's opinion, "Vigour, energy, resolution, firmness of purpose—these carry the day. Is there one whom difficulties dishearten, who bends to the storm? He will do little. Is there one who will conquer? That kind of man never fails:" adding, "The longer I live, the more I am certain that the great difference between men, between the feeble and the powerful, is energy—invincible determination, a purpose once fixed, and then death or victory. That

* *Vaccination: Is it Worthy of National Support? A Public Discussion in South Place Chapel, Finsbury, on 28th May, 1878*, under the Presidency of Sir Thomas Chambers, M.P., Recorder of the City of London. London, 1878.

Mr. Wheeler has published the following pamphlets—

Vaccination in the Light of History. London, 1878.

Vaccination—Opposed to Science and a Disgrace to English Law. London, 1879.

Vaccination—1883. London, 1884.

† *Government Prosecutions for Medical Heresy; a Verbatim Report of the case Regina* v. *Tebb. Dedicated to the Board of St. Pancras Guardians. With an Introduction and Appendix of Illustrative Matter.* London, 1879.

quality will do anything that can be done in this world." *

Mr. P. A. Taylor's speeches in the House of Commons have been widely read, but his Letter to Dr. W. B. Carpenter has been, perhaps, the most effective contribution to the good cause.† Dr. Carpenter had volunteered for the defence of vaccination, and had challenged Mr. Taylor; and being of a credulous and uncritical habit of mind, he collected and recited the various legends and factitious statistics that form the body of vaccination, with additions from his private resources; thus constituting himself an objective of attack, and providing Mr. Taylor with an excellent opportunity. Mr. Taylor accepted the challenge: he captured and destroyed Dr. Carpenter's positions seriatim, leaving him routed and helpless. The Letter has had an immense circulation, and its influence on public opinion is manifesting itself in a thousand ways. Neither Dr. Carpenter nor any vaccinator has ventured to reply to Mr. Taylor; the fact being that no reply is possible. Any one who attentively reads Mr. Taylor's Letter cannot fail to perceive that the practice represented by Dr. Carpenter is rooted in illusion and imposture. Silence under the circumstances may therefore pass for discretion: silence on Dr. Carpenter's part possesses a significance it would be difficult to misinterpret. Indeed, none know better than those responsible for vaccination as a medical interest, that the less it is brought under discussion the more likely it is to endure. *Quieta non movere* is their motto; and officious champions like Dr. Carpenter have little thanks for their restlessness.

Correspondence in newspapers is a well-recognised means for the diffusion of new ideas, and in the use of this means the opponents of vaccination have acquired

* Mr. Tebb's publications have been many, and his last is especially noteworthy—*Compulsory Vaccination in England: with Incidental References to Foreign States.* London, 1884. Pp. 64.

† *Vaccination. A Letter to Dr. W. B. Carpenter, C.B.* By P. A. Taylor, M.P. London, 1881.

no little distinction. There is an increasing number throughout the country who not only know their own case, but the case of their adversaries better than do their adversaries themselves; and if an editor has grace enough to maintain a fair field and show no favour, the issue is invariably satisfactory. Two able correspondents, who have gone hence, are especially worthy of mention —Andrew Leighton and William Gibson Ward. Mr. Leighton was a Liverpool merchant, who, having become interested in the vaccination question, made its discussion the occupation of his leisure. With a clear and logical mind, patient, sagacious, and tolerant, prejudice itself could scarcely withstand his sweet reasonableness. Almost to the day of his death, 14th January, 1877, he was engaged in newspaper controversy, each letter bearing witness to his admirable temper and persuasive power.* Mr. Ward of Perriston Towers was a man of wide reading and perfervid character, who wrote and talked after the manner of Cobbett, whom in many respects he resembled. Having discovered the truth as concerned vaccination, he applied himself vigorously and successfully to its diffusion. He sustained his prosecution as a parent with the joy of one who delights in battle; and, indeed, as it was said, a periodical prosecution would have suited him exactly, providing him with occasion for a rousing speech in court and a discussion with the bench, to be duly reported in the Herefordshire newsapers. Mr. Ward died 18th October, 1882. Latterly he had access to *The Times*, and followed up a series of letters on subjects he had made his own with one on which he argued, that smallpox was neither an unmixed evil, nor a cause of extra mortality.†

To enter into a closer enumeration of those engaged in the movement against vaccination would be invidious and bound to imperfection. Still it would be grateful to

* Mr. Leighton published nothing outside the newspapers except a letter addressed to William Chambers of Edinburgh, entitled, *The People of Dewsbury and Vaccination.* London, 1876.

† "A New View of Smallpox."—*The Times*, 25th December, 1879.

refer to the various services of veterans like Sir Jervoise Clarke Jervoise, Mr. Thomas Baker, Dr. Edward Haughton, Mr. T. B. Brett of St. Leonards, Mr. Edmund Proctor of Newcastle, Mr. John Lucas of Gateshead, Mr. R. A. Milner of Keighley, Mr. W. F. Fox of Dewsbury, Dr. E. J. Crow of Ripon, Mr. Francis Davis, jun., of Enniscorthy, Mr. Wm. Thurlow of Sudbury, Mr. Wm. Adair of Maryport, Mr. Charles Gillett of Banbury, Dr. T. L. Nichols, Mr. James Burns, and Mr. Amos Booth of Leicester. These and others have borne the odium of despised truth, and live to see it steadily acquiring favour and force, whilst the delusion to which it is opposed is entering the region of scepticism preparatory to dispersion and contempt.

All means are good against evil, but deeds are more than words; and talk against vaccination counts far less than resistance to its infliction. The more who are withheld from the rite, the more live to prove its inutility; and the more the law designed to enforce is set at defiance, the surer and sooner will be its overthrow. Nevertheless, let us not forget what this warfare costs, nor how we are indebted to the men and women, brave, tender, and true, by whom it is endured. As a rule, the rich are exempt: the contest is with the poor. As Mrs. Jacob Bright says—

> I object to Compulsory Vaccination because it is an outrageous piece of class legislation. No one in easy circumstances, no one possessing the luxury of a family doctor, need have his child vaccinated. He has only to tell his family doctor that he objects to Vaccination, and the matter is at an end. Did ever any one hear of a family doctor who threatened to prosecute the head of a family for nonconformity in this respect? I think not. But the family doctor of the poor is the parish doctor. He is quite independent of his patient, and being paid by other people to vaccinate them, he not only vaccinates them in many cases against their will, but he does it *when* he likes, and with *what* virus he likes, irrespective of the feelings or opinions they may entertain.
>
> I was riding some time ago in Sherwood Forest, and stopped to ask for a glass of water at a cottage, where a poor woman was standing with her fat little baby in her arms. I said, "You've got a pretty boy there. Has he been vaccinated?" The mother's face, which was glowing with pride at praise of her boy, suddenly fell, and she said, "No, madam, he hasn't, but he'll have to be. We've

lost one through it," she added, with tears in her eyes. She is one of a great number of poor people who, rightly or wrongly, believe that Vaccination is dangerous, and yet are not able to resist the pressure put upon them to vaccinate; they are too poor, and in most cases have not the spirit to resist.

I say that it is disgraceful to fine and imprison people for forming an independent opinion on a medical question; and it is particularly disgraceful that my poor neighbour should be thus persecuted when I am free, absolutely free, to please myself whether my children shall be vaccinated. It is not possible that this thing can continue.*

The contest, be it repeated, is with the poor. "There is no getting over the fact," says Dr. John Scott of Manchester, "that vaccination is hated among the working class, in Lancashire, at least." Vaccination is hated, and rightly hated, and the law is set to overcome that hatred. Multitudes submit because they either know not how, or dread to do otherwise; but an honourable and increasing number prefer the better part—holding by what they recognise for right, resolved to obey God rather than man. It has been said, "The days of martyrdom, like those of miracles, have ceased"; but have they? The record of humble English folk, who, during the past thirty years, have withstood the infamous Vaccination Acts, bears witness to the contrary. Martyrdom and heroism are rarely recognised by those who occasion or dislike their manifestation: it is sympathy that opens the eyes to their appearance. Unknown or despised, these medical nonconformists have stood true to their faith in the order of nature against doctor-craft, and have counted nothing dear to them if so be they could preserve their children and conscience from outrage. They have been prosecuted with all the malice and pertinacity of petty authority—of Justice Shallow and Bumble; have been insulted from the judgment seat; have been fined to the uttermost farthing and loaded with uttermost costs, and this repeatedly; have had their

* Letter from Ursula M. Bright to Annual Meeting of the London Society for the Abolition of Compulsory Vaccination, held in Shoreditch Town Hall, 13th May, 1884.

goods and furniture distrained, and their homes broken up; have been sent to jail with hard labour, and subjected to every indignity and cruelty of the prison-house; have been hunted from parish to parish, and in despair driven to exile. And these have been Englishmen, the law English, and the time our own! The Master of the Rolls recently observed; "What is contrary to the feelings of every honest man cannot be the law of England—or, if it be, the sooner it ceases to be law the better." It would be unfair to charge the injustice of the Vaccination Acts to the English people. To most of them their character and operation are unknown. The chief sufferers are hidden under the hatches of poverty, and are unable to make the land resound with their wrongs. Those, too, who essay to speak for them are confronted with that obdurate dulness with which the early Free-Traders had to contend when restriction was thought to be as good for commerce as cowpox is thought to be good for health in stopping smallpox. Mr. Bright, in praising the speeches of Mr. Villiers at Birmingham, 29th January, 1884, remarked—

> I mention their publication to revive the strange and painful fact that during the years when those speeches—so convincing, so absolutely unanswerable, were spoken in the House of Commons, they were addressed, as it were, to men morally stone deaf. The arguments were not answered, the facts adduced were not disproved, the appalling suffering of the people was not denied.

A similar deafness to the oppression of compulsory vaccination prevails, though there are signs of awakening. Still it is not for those who suffer to wait on politicians. The words are trite, but true as trite—

> "Know ye not,
> Who would be free, themselves must strike the blow?"

Many are discovering that in union is strength. Combinations for mutual protection and insurance against penalties are multiplying. Resist and Organise is their watchword: organise, study the law, find out its weak places, make the most of them, harass its administrators, vote only for guardians who are opposed to compulsion;

and, in short, do whatever is possible to frustrate the pernicious legislation.

Sometimes it is asked, "Why not obey the law and agitate for its repeal?" but the suggestion is designed for stultification. Suppose the Society of Friends had consented to take oaths until the law was adjusted to their consciences, would they not have been swearing to this day? Suppose some dissenters had not refused to pay church rates, when would church rates have been abolished? Suppose the Irish had submitted to English rule until convinced by reason of the wickedness and folly of their domination, how long would they have had to wait for the redress of their wrongs? Such questions might be run over pages, but to what purpose? All know (unless submerged in cant) that those who would have must take; and that no man's rights can be entrusted to another's good-will, be the trustee ever so just. Vaccination is a medical monopoly established, endowed, and enforced—a tyranny to be overthrown. Those who profit by it will never consent to its surrender, whatever the evidence of its inutility and mischief: it would be against experience to expect otherwise: and they will never be so valiant in defence of their monopoly, and so profuse in the assertion of its overwhelming advantages, as when its dissolution is imminent. The wise understand these things. There is, therefore, but one way in which to get rid of the incubus, and that way is outright resistance. Already such resistance has proved successful in several parts of the country. The law has been reduced to abeyance, and similar resistance will be rewarded with similar results. Moreover, further legislation in favour of vaccination has been checked. Parliament will pass no more Vaccination Acts. The plague thus far is stayed: the worst possible has been seen: the business is to clear away what remains.

It is sometimes said that vaccination is unnatural, and the saying is disregarded as unscientific or absurd. But is it unscientific? and is it absurd? Men deserve an

order in Nature, and when they perceive that any procedure is at variance with that order, they instinctively condemn it as unnatural, though possibly they may be unable to give a philosophic account of their aversion.

We unite in the assertion that vaccination is unnatural, and when we are asked, Why? we answer, Because it is an operation which violates the order maintained in the formation of the blood. If we follow food into the stomach and attend to the processes of digestion, rejection, and assimilation—the infinite care, in short, with which blood is made, we shall start back with dislike, and even horror, from a practice which sets at naught all this care; which attacks the blood directly, and attacks it to poison it. Hence it is that vaccination is stigmatised as unnatural, being a process which not only reverses the course of Nature in blood-making, but doubly unnatural, as violating that course and poisoning its product.

To re-affirm and illustrate our meaning, we take the following piece of physiological poetry, poetic yet scientifically accurate, from Dr. Garth Wilkinson—

In the human body, whatever enters the blood, be it even the most bland food, the juice of the grape or the pomegranate, or the fine flour of wheat, be it oil, wine, or fig, is broken up first, and then led inwards through long avenues of introduction. The most innocent food goes in most easily and first. The police and surveillance for the rest are exceeding great and many. The senses electively appetise the fine food; it has to pass through their peremptory doors of liking and disliking; instructed doors of memory, association, imagination, reason, wisdom, religion, in adults. It is then attacked by digestive salivas, tests, examinations, and severe juices, and questioned to the uttermost in that degree, which corresponds to the former. It is strained through organ after organ; each a tribunal of more than social exactitude. It is absorbed by the finest systems of choice in pore and vessel, organic judgment sitting in every corner, and presiding over each inner doorway. It is submitted to glandular and lung purifications, and their furnaces of trials and eliminations. At last it is weighed in the balances, and minted by supreme nerve wisdoms; and only after all these processes is it admitted into the golden blood. This of the best food, such as good and wise men eat. The worst food is made the best of by a constant passage through bodily mercies and mitigations—a no less sedulous though a penal process.

This is physiology, and divine-human decency, and like a man's life. Vaccination traverses and tramples upon all these safeguards and wisdoms; it goes direct to the blood, or, still worse, to the lymph, and not with food; it puts poison, introduced by puncture, and that has no test applicable to it, and can have no character given to it but that it is fivefold animal and human poison, at a blow into the very centre, thus otherwise guarded by nature in the providence of God. This is blood assassination, and like a murderer's life.*

Finally, vaccination is an attempt to swindle Nature. The vaccinator says, "Come, my little dear, come and let me give you a disease wherewith I shall so hoax Nature that henceforth you may live in what stench you please, and smallpox shall not catch you." But can Nature be swindled? can Nature be hoaxed? Mr. Lowell, in praising the genius of Cervantes, says, "There is a moral in *Don Quixote*, and a very profound one it is — that whoever quarrels with Nature, whether wittingly or unwittingly, is certain to get the worst of it." There is sometimes an apparent triumph over Nature. We do wrong, and fancy we may evade the penalty by some cunning contrivance, but ere long we perceive with dismay that the consequences were only concealed or staved off, and that we have to answer to the uttermost farthing. Vaccination is a dodge kindred with incantations and similar performances whereby it is hoped to circumvent the order of the Highest, and compel his favour apart from obedience to his will. By artifice it is attempted to obviate a consequence of ill-living, whilst persisting in ill-living; but if it were possible to escape smallpox by such means, we should have equal punishment in some other mode. No: smallpox with its alternatives and equivalents can only be avoided through compliance with the old-fashioned prescription, "Wash you, make you clean; cease to do evil, learn to do well." The lesson is hard to learn, and harder to practise; but there is no evading it if we would

* *On Human Science, Good and Evil, and its Works; and on Divine Revelation and its Works and Sciences.* London, 1876.

be healthy and happy. Wherefore all tricks like vaccination are bound to nullity and disaster. As Hosea Biglow says—

"You hev gut to git up airly
Ef you want to take in God."

WILLIAM A. GUY, F.R.C.P., F.R.S.

Is Vaccination a preventive of Smallpox? To this question there is, there can be, no answer except such as is couched in the language of figures.—*Journal of the Statistical Society*, 1882, vol. xlv. p. 414.

G. F. KOLB,

Member of the Royal Statistical Commission of Bavaria.

From childhood I had been trained to look upon Cowpox as an absolute protective from Smallpox. I believed in Vaccination more strongly than in any ecclesiastical dogma. Numerous and acknowledged failures did not shake my faith. I attributed them either to the carelessness of the operator or the badness of the lymph.

In course of time the question of Compulsory Vaccination came before the Reichstag, when a medical friend supplied me with a mass of statistics in favour of Vaccination, in his opinion, conclusive and unanswerable. This awoke the statistician within me. On inspection, I found the figures delusive; and closer examination left no shadow of doubt in my mind that the statistical array of proof represented a complete failure.

My investigations were continued, and my judgment was confirmed. For instance, Cowpox was introduced to Bavaria in 1807, and for a long time none, except the newly-born, escaped Vaccination; nevertheless in the epidemic of 1871, of 30,472 cases of Smallpox, no less than 29,429 were vaccinated, as is shown in the documents of the State.—*From Letter to* MR. WILLIAM TEBB, *22nd January, 1882.*

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PUBLICATIONS ON VACCINATION AND SUCCESSIVE ASSURANCES.

An Inquiry into the Cause and Effects of the Variolæ Vaccinæ, a Disease discovered in some of the Western Counties of England, particularly Gloucestershire, and known by the name of the Cow Pox. London: 1798.

1798.—What renders the Cow Pox Virus so extremely singular is, that the person who has been thus affected is for ever after secure from the infection of the Small Pox; neither the exposure to the variolous effluvia, nor the insertion of the matter into the skin, producing this distemper.

It is curious to observe, that the virus, which with respect to its effects is undetermined and uncertain previously to its passing from the horse through the medium of the cow, should then not only become more active, but should invariably and completely possess those specific properties which induce in the human constitution symptoms similar to those of the variolous fever, and effect in it that peculiar change which for ever renders it unsusceptible of the variolous contagion.

It clearly appears that this disease leaves the constitution in a state of perfect security from the infection of the Small Pox.—Pp. 121, 337.

Further Observations on the Variolæ Vaccinæ. London: 1799.

1799.—The result of all my trials with the virus on the human subject has been uniform. In every instance the patient who has felt its influence has completely lost the susceptibility for the variolous contagion.—Pp. 152-158, 336.

A Continuation of Facts and Observations relative to the Variolæ Vaccinæ, or Cow Pox. London: 1800.

1800.—The scepticism that appeared even among the most enlightened of medical men, when my sentiments on the important subject of the Cow Pox were first promulgated, was highly laudable. To have admitted the truth of a doctrine, at once so novel and so unlike anything that had ever appeared in the Annals of Medicine, without the test of the most rigid scrutiny, would have bordered upon temerity; but now, when that scrutiny has taken place, not only among ourselves, but in the first professional circles in Europe, and when it has been uniformly found in such abundant instances, that the human frame, when once it has felt the influence of the genuine Cow Pox in the way that has been described, is never afterwards, at any period of its existence, assailable by the Small Pox, may I not with perfect confidence congratulate my country and society at large on their beholding in the mild form of the Cow Pox, an antidote that is capable of extirpating from the earth a disease which is every hour devouring its victims; a disease that has ever been considered as the severest scourge of the human race.—Pp. 166, 338-339, 357, 365, 473.

The Origin of Vaccine Inoculation. London: 1801.

1801.—It now becomes too manifest to admit of controversy, that the annihilation of the Small Pox, the most dreadful scourge of the human species, must be the final result of this practice.—P. 183.

Petition for Remuneration to House of Commons. 1802.

1802.—Cow Pox admits of being inoculated on the human frame with the most perfect ease and safety, and is attended with the singularly beneficial effect of rendering through life the persons so inoculated perfectly secure from the infection of the Small Pox.—Pp. 184, 337, 355.

On the Varieties and Modifications of the Vaccine Pustule occasioned by an Herpetic State of the Skin. Printed in *Medical and Physical Journal*, August, 1804; and reprinted as a pamphlet, Cheltenham, 1806, and Gloucester, 1819.—P. 340.

VACCINATION EQUAL TO VARIOLATION.

1804.—What I have said on Vaccination is true. If properly conducted it secures the constitution as much as Variolous Inoculation possibly can.—Baron's *Life of Jenner*, vol. ii. p. 15.

Duly and efficiently performed, Vaccination will protect the constitution from subsequent attacks of Small Pox as much as that disease itself will. I never expected that it would do more, and it will not, I believe, do less.—*Ibid.* p. 135.

1806.—The security given to the constitution by Vaccine Inoculation is *exactly equal* to that given by the Variolous. To expect more from it would be wrong. As failures in the latter are constantly presenting themselves, we must expect to find them in the former also.—*Letter to Richard Dunning, 1st March, 1806.*—Pp. 339, 355.

Facts for the most part unobserved or not duly noticed respecting Variolous Contagion. London: 1808.

1808.—It should be remembered that the constitution *cannot*, by previous infection, *be rendered totally insusceptible of the Variolous Poison.* Neither the casual, nor the inoculated Small Pox, whether it produce the disease in a mild or violent way, can perfectly extinguish the susceptibility.—P. 338.

Letter to William Dillwyn on the Effects of Vaccination in Preserving from the Small Pox. Philadelphia: 1818.

1818.—My confidence in the efficacy of Vaccination to guard the constitution from Small Pox is not in the least diminished. That exceptions to the rule have appeared, and that they will appear, I am ready to admit. They have happened after Small Pox Inoculation; and by the same rule, as the two diseases are so similar, they will also happen after Vaccine Inoculation.—P. 344.

LAST TESTIMONY.

1823.—My opinion of Vaccination is precisely as it was when I first promulgated the discovery. It is not in the least strengthened by any event that has happened, for it could gain no strength; it is not in the least weakened; for if the failures you speak of had not happened, the truth of my assertions respecting those coincidences which occasioned them would not have been made out.—P. 354.

The whole of Jenner's claims re-asserted for Smallpox Cowpox by Mr. John Simon, after Inoculation with which—

1857.—"Neither renewed vaccination, nor inoculation with Smallpox, nor the closest contact and cohabitation with smallpox patients, will occasion him to betray any remnant of susceptibility to infection."—*Papers relating to the History and Practice of Vaccination.* London: 1857.—P. 513.

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II.—**The Diffusion of Knowledge concerning Vaccination.**

III.—**The Maintenance in London of an Office for the Publication of Literature relating to Vaccination, and as a Centre of Action and Information.**

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SMALLPOX is a member of the group of diseases described as zymotic which originate in unwholesome conditions of life, and in common are diminished and prevented by the reduction and removal of those conditions.

In times when the laws of health were imperfectly understood, it was believed that by poisoning the blood with the virus of smallpox, or cowpox, a future attack of smallpox might be escaped. While many kindred medical practices have been discredited and forgotten, Vaccination, endowed by the State, has survived, and has entered into legislation, and is enforced with fine and imprisonment. It is in vain for Nonconformists to plead that they do not believe that Vaccination has any power to prevent or to mitigate smallpox, or that it is attended by the risk of communicating foul diseases. They are told they may believe what they like, but that vaccinated they must be, for the benefit of the rite is settled beyond dispute, and that only fools and fanatics venture to question what has been irrevocably determined.

It is to attack and overthrow this monstrous tyranny that the LONDON SOCIETY has been established. The members desire to enlighten the public mind as to the history of Vaccination, as to its injury in communicating and intensifying other diseases, and as to the failure of the compulsory law to stamp out or even diminish the ravages of smallpox. Many too, whilst disinclined to discuss Vaccination as a medical question, or to surrender confidence in its prophylaxy, are opposed to its compulsory infliction. They maintain that every remedy should be left to justify itself by its own efficacy, and that of all prescriptions the last which requires extraneous assistance is Vaccination; for its repute is based on the fact that its subjects are secure from smallpox, and in that security may abide indifferent to those who choose to neglect its salvation. Even nurses in smallpox hospitals, it is said, when efficiently vaccinated and revaccinated, live unaffected in the variolous atmosphere. Therefore, they hold that to compare an unvaccinated person to a nuisance, as is frequently done, is to make use of an epithet that implicitly denies the virtue asserted for Vaccination, a nuisance being a voluntary danger or annoyance which another cannot conveniently avoid. They also hold that to establish any medical prescription, and to create interests indiffered with that prescription, is to erect a bar to improvement; for it is obvious that any novelty in the treatment of

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